



DETROIT RIVER

A CANADIAN HERITAGE RIVER



Monitoring Report 2011 to 2021



Essex Region Conservation
the *place* for life

EXECUTIVE SUMMARY



Image 1 - The Detroit River connects Canada (left) and the United States (right).

The Detroit River was nominated to the Canadian Heritage Rivers System (CHRS) in 1999 because of its outstanding human heritage and recreational values. Located in the heart of the Great Lakes, it was designated as a Canadian Heritage River in 2001, becoming the first and only river to receive both Canadian and American Heritage River designations. In 2013, the Essex Region Conservation Authority published the Monitoring Report 2001 – 2011 describing activities, research and studies which have occurred on the Detroit River since designation that relate to natural, cultural and recreational value frameworks.

This report provides an update for the past decade that continues to inventory events, activities and projects that relate to the condition of natural heritage values, cultural heritage values, recreational values and integrity guidelines against CHRS frameworks. Management objectives identified in the designation document are also tabulated and the degree of achievement noted.

Indigenous communities stewarded the Detroit River and its watersheds for over 6,000 years. From a recreational

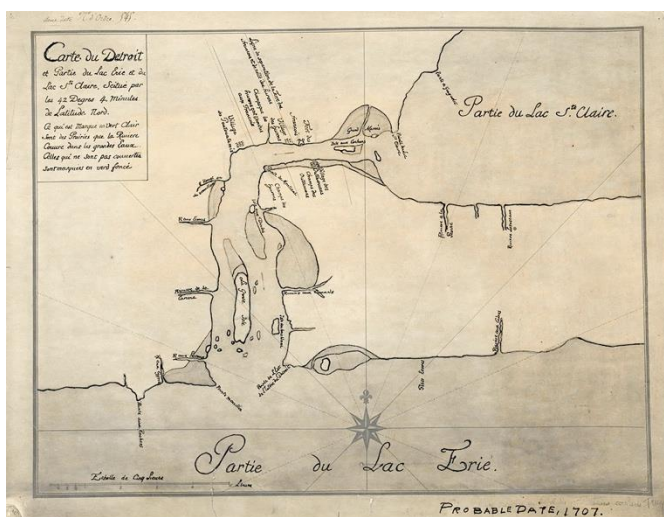


Image 2 - An early Detroit River map, circa 1707.

perspective, the river features a world class fishery, and is known around the world for its walleye in particular. The Detroit riverfront promenades that have been created across Windsor, LaSalle and Amherstburg highlight the river's recreational draw for the region.

From its role in facilitating the industrialization of Windsor and Detroit to the Great Lakes Water Quality Agreement, its pathway to freedom as a terminus of the Underground Railroad, to its importance as the busiest international crossing in North America, the Detroit River has a rich and vibrant story to tell. The Detroit River is integral to the Windsor-Essex County community and the lives of its residents. This unique international waterway flows through a metropolitan region of over 5 million people, binding the communities which share this precious resource.

Since reporting in 2013, there have been countless examples that the Detroit River communities are continually dedicated to restoring, conserving and enhancing the natural heritage of the Detroit River watersheds.

This report has determined that the heritage values upon which the Detroit River was designated remain unchanged, or in fact have improved. The conclusion of this report is that the Detroit River is worthy of continued designation as a river of national significance within the Canadian Heritage River System.

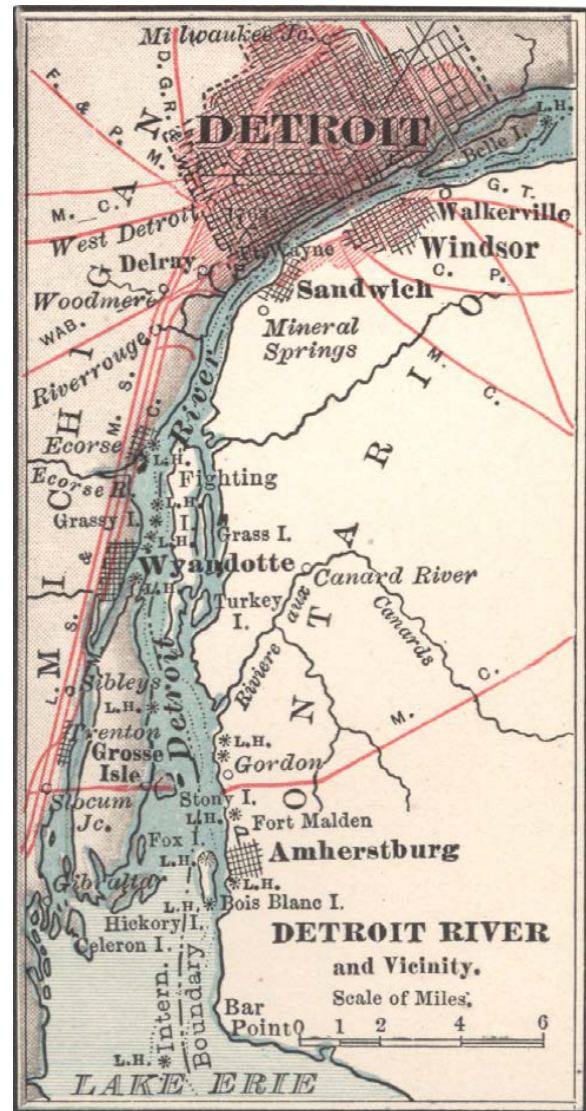


Image 3 - A 19th Century map of the Detroit River.

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For more information, or for a copy of this document in an alternative format, please contact ERCA at 519-776-5209 or accessibility@erca.org.

INTRODUCTION

The Canadian Heritage River System (CHRS) is a national program promoting river heritage conservation through the recognition of Canada's outstanding rivers. A cooperative effort of federal, provincial and territorial governments, the CHRS requires annual reports and in-depth monitoring every ten years to ensure that a designated river retains the outstanding heritage values for which it was nominated.

The Detroit River is within the lands honoured by the Wampum Treaties; agreements between the Anishinaabe, Haudenosaunee, Lenni Lenape and allied Nations to peacefully share and care for the resources around the Great Lakes. Specifically, we would like to acknowledge the presence of the Three Fires Confederacy (Ojibwe, Odawa, Potawatomi) and Huron/Wendat Peoples.

We value the significant historical and contemporary contributions of local and regional First Nations and all of the Original Peoples of Turtle Island – North America who have been living and working on the land from time immemorial.

The Detroit River is unique in Canada, the United States, and indeed, the world. As the busiest international waterway in North America, the Detroit River, in fact, is more a road than a boundary. Designation of the Detroit as a Canadian Heritage River encourages binational cooperation in its wise management and environmental restoration and is a testament to its significance as a national treasure.



Image 4 - Deputy Prime Minister Herb Gray and Minister of Canadian Heritage Sheila Copps designate the Detroit River as a Canadian Heritage River on July 19, 2001.

Three significant documents were prepared by the Essex Region Conservation Authority (ERCA) with input from the bi-national Detroit River community prior to its designation into the system: The Detroit River Background Report (1998), The Detroit River Nomination Document (1999) and The Management Strategy for the Detroit River as a Canadian Heritage River (2001). On July 19, 2001, the Detroit River became the first and only river to receive both Canadian and American Heritage River designations.

Since that time, a number of strategic actions have taken place. Ten years of these efforts between 2001 to 2011 were captured in detail in the Monitoring Report 2001 – 2011 (ERCA,

2013) identifying actions and efforts that contribute to the cultural, natural and recreational values of the Detroit River. Those listed reflect the many strategic actions recommended in The Management Strategy for the Detroit River as a Canadian Heritage River (2001) to conserve, interpret, enhance and appreciate the Detroit River and its watershed. This report outlines actions that have taken place between 2011 and 2021.

There are four objectives of this second 10 Year Monitoring Report for the Detroit River:

1. To describe any major changes that occurred in relation to the river since its designation.
2. To review the natural, cultural and recreational values for which the river was nominated and determine if the river still possesses these values.
3. To review the integrity guidelines of the river and describe whether the river continues to possess these values.
4. To review the recommendations in the designation document *Management Strategy for the Detroit River as a Canadian Heritage River* and determine the levels to which they have been accomplished.

Background

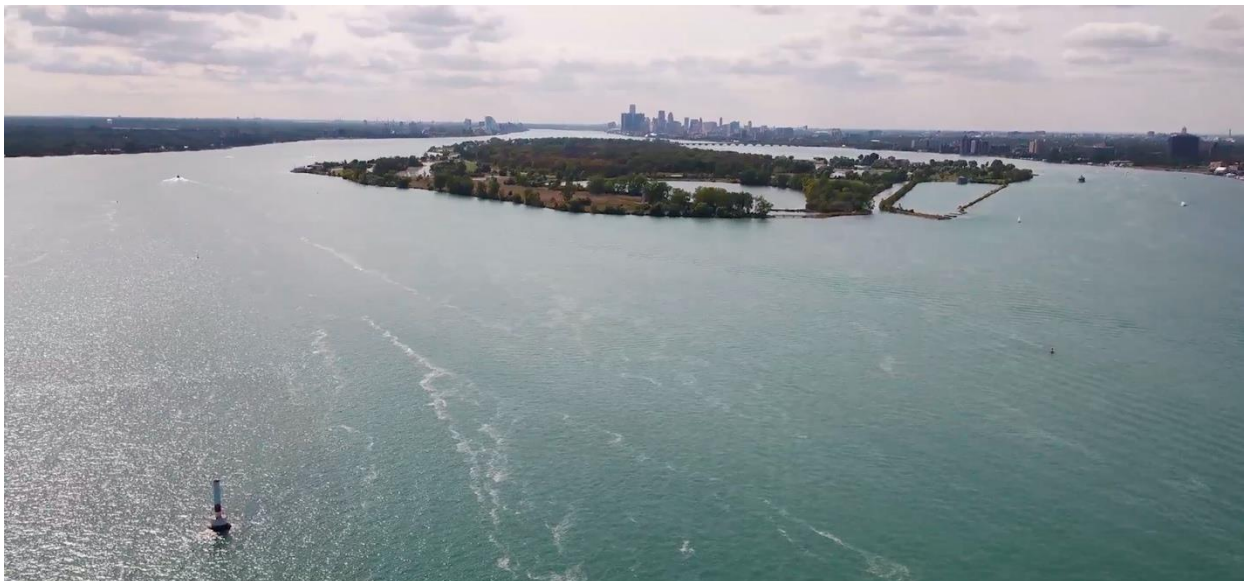


Image 5 - The Detroit River connects Canada (left) and the United States (right). Belle Isle (American) can be seen in the centre. Windsor and Detroit are in the background.

The Detroit River lies in the heart of the Great Lakes Basin connecting Lake St. Clair with Lake Erie. It flows approximately 51 kilometres from the City of Windsor, through the Town of LaSalle and to the Town of Amherstburg on the Ontario side. In Michigan, the river flows from Detroit to Brownstown Township. Its width varies from six-tenths of a kilometre to five kilometres. The Canada-U.S. boundary divides the river virtually down the middle. The Detroit River watershed

drains more than 2,000 square kilometers and its tributaries include Marsh Creek and the Rouge and Ecorse Rivers on the American side. Turkey Creek, Little River and the Canard River are the Detroit River's Canadian sub-watersheds.

Methodology

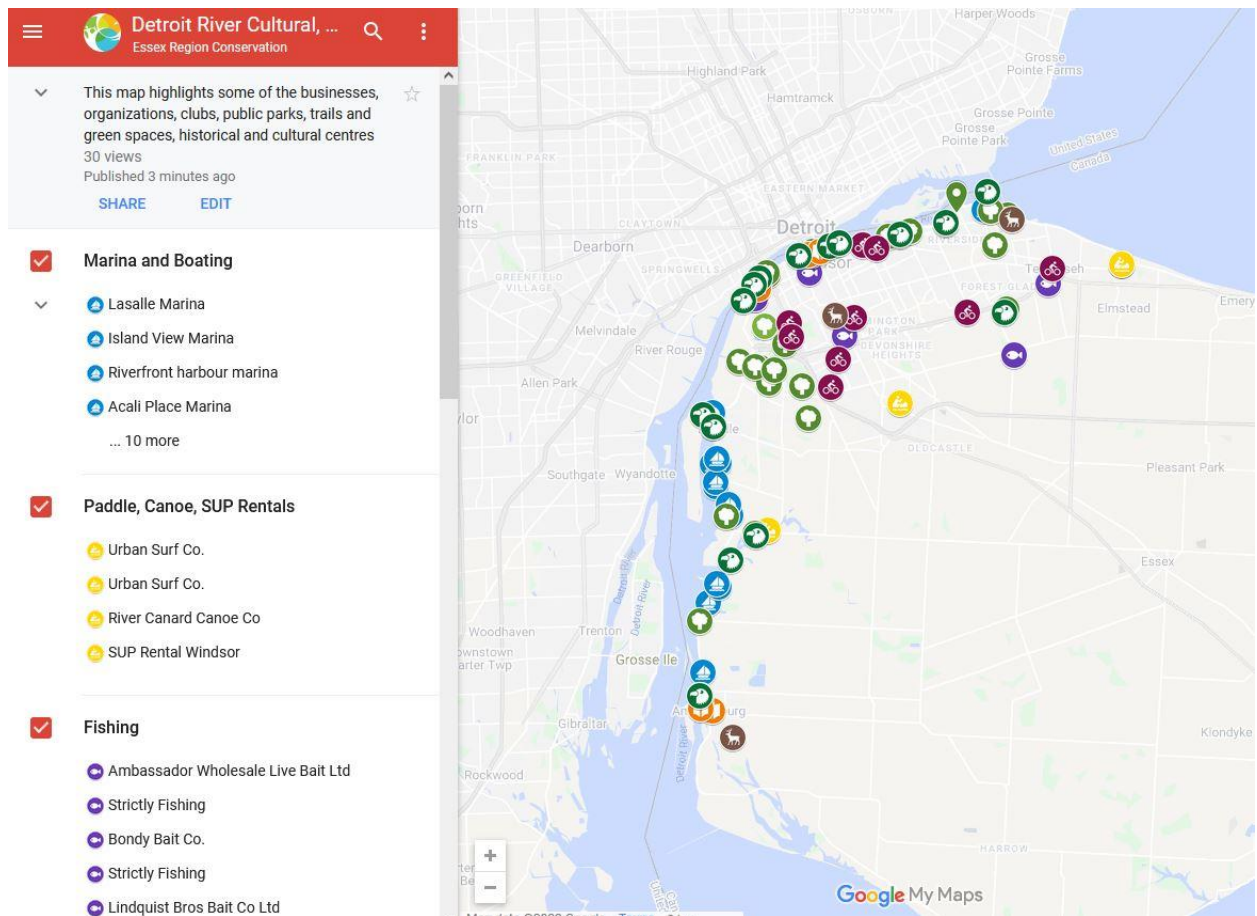
Key ERCA staff members, the Remedial Action Plan (RAP) Coordinator for the Detroit River Canadian Cleanup (DRCC) initiative, and others including municipal staff members and curators of several regional heritage entities collaborated to review the values upon which the Detroit River was designated and to assess their current condition between 2011 and 2021.

Several approaches were used to gain information about the activities and changes to the Detroit River since the 10 Year Monitoring Report published in 2011:

- A literature review of all Annual Report submissions completed by the Essex Region Conservation Authority;
- A literature review of all Detroit River Canadian Cleanup reports published between 2010 and 2021;
- A review of ERCA's Registry of Actions, and new collection of actions developed through the DRCC;
- Discussions and interviews with key partners involved in upholding the heritage values for which the Detroit River was nominated; and
- The recommended management actions from the document *The Management Strategy for the Detroit River as a Canadian Heritage River (2001)* were also evaluated.

Information was compiled and organized based on the CHRS natural heritage, cultural heritage, recreation heritage as well as the integrity frameworks. In addition, information gained from the various sources was summarized and was evaluated as to whether there had been any changes or threats to the values in the monitoring period. While the Detroit River was not nominated originally for its natural heritage values, significant actions have been taken and measurable progress made in this category since 2011. An outline of these successes is included to demonstrate these remarkable achievements. A chronology of significant events since 2011 was also compiled. Further, [a Google Maps product was created that highlights recreational, cultural and natural heritage features of the Detroit River and watersheds](#), which includes a landing page photo shown as Figure 1 below.

Figure 1. Detroit River Cultural, Recreational and Natural Heritage Map



Detroit River Canadian Cleanup



Image 6 - Industry and railways on the Canadian side of the Detroit River.

When the Windsor-Detroit area underwent rapid industrialization at the turn of the 20th century, the Detroit River became notoriously polluted. These environmental issues have been identified as being related to, or the cause of, the impairment of several beneficial uses. The 1970s and 1980s saw the development of a massive conservation effort aimed at cleaning up the Detroit River. The Great Lakes Water Quality Agreement (GLWQA) between Canada and the United States, first signed in 1972, commits both countries to protect and restore the Great Lakes Ecosystem.

In 1987, the Detroit River was named a Great Lakes Area of Concern (AOC) under the GLWQA. An AOC is a location where environmental quality is degraded compared to other areas in the Great Lake Basin resulting in the impairment of beneficial uses. The GLWQA identifies 14 beneficial uses that must be restored in order to remove the designation as an AOC. The environmental issues are known as beneficial use impairments or BUIs. Each BUI has a set of locally-defined de-listing criteria that are specific, measurable, achievable, and scientifically-defensible.

A Remedial Action Plan (RAP) is an AOC specific cleanup plan for restoring the environmental quality. The Detroit River Canadian Cleanup (DRCC) is responsible for implementing the Canadian Detroit River RAP, in conjunction with its partners. The DRCC aims to improve the natural heritage of the river through implementing habitat restoration, pollution prevention, and monitoring and research projects.

Through scientific studies, monitoring and research, stewardship and restoration efforts and pollution prevention programs and projects, the DRCC and partners have made significant contributions to improving the overall ecosystem health of the Detroit River watershed since 2011 and these projects will be highlighted throughout the report.

Appendix I highlights the status of the 14 BUIs for the Canadian side of the Detroit River over time. In particular, it is important to note that over the past decade, 9 of these BUI have been re-categorized as 'not impaired', following significant restoration efforts. For more information about the RAP, please visit the DRCC website www.detroitriver.ca.



Image 7 – The release of the Canadian Detroit River Remedial Action Plan, 2012.

CHRONOLOGY OF EVENTS SINCE 2011 TEN YEAR REPORT

The following sections outline significant events, actions, research and studies that contribute to the Detroit River's natural, recreational and cultural values between 2011 and 2021.

Table 1. Chronology of Events Since 2011

Natural Heritage Values - Significant Actions, Research or Studies (2011 to 2021)

Ongoing Activities

Detroit River Evening

Since 2011, the Detroit River Canadian Cleanup (DRCC) has hosted the Detroit River evening to celebrate the coordinated efforts to improve the Detroit River and remove it from the list of Great Lakes' Areas of Concern (AOC).

Annual Film Screening

Each year, the DRCC hosts a free and public event to screen a new film that focuses on water, natural resources, the Great Lakes or the Detroit River. The event screens the film as well as hosts a panel discussion with select individuals from different organizations in the community. Previous film screenings include: Waterlife (2009), Tapped (2010), Mysteries of the Great Lakes (2011), Liquid Assets (2012), Freshwater Seas: The Great Lakes (2013), From Billions to None (2014), PROJECT: ICE (2015) and What Lies Below (2017), Making Waves: Battle for the Great Lakes (2018), Clear Water: Detroit's River Revival (2019), A Plastic Ocean (2020) and Ecohighway (2021).



Image 8 - Attendees gather for a DRCC movie screening.

State of the Detroit River Boat Tour

The Citizens Environment Alliance (CEA) hosts the State of the Detroit River Boat Tour annually which offers expert narration about the Detroit River's environmental hot spots and unique fish and wildlife habitats.

Binational Support for the Detroit River

The DRCC attends approximately five U.S. Public Advisory Council (PAC) meetings annually (virtually and in person) with the Friends of the Detroit River.

Shiver on the River

Each year the Friends of the Detroit River host Shiver on the River at Belle Isle Park. Shiver on the River is a family event designed to educate local citizens about the significance of the Detroit River.

Detroit River Community Outreach

Both the Essex Region Conservation Authority (ERCA) and DRCC participate annually in numerous events and workshops hosted in the community to raise awareness about environmental issues the Detroit River faces and encourage community-based action and stewardship.

State of the Strait

The State of the Strait is a binational (Canada-United States) collaboration that hosts a meeting every two years to bring together government managers, researchers, students, environmental and conservation organizations, and concerned citizens.

Detroit River Community Stewardship

Through various partnerships, the DRCC and ERCA support and host annual community restoration initiatives across the Detroit River watershed.

Pathway to Delisting Document

The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an AOC.

Coastal Wetland Monitoring

The Canadian Wildlife Service began monitoring the health of four wetlands in the Detroit River in 2011, and have continued annually.

Great Lakes Marsh Monitoring Program

Through ERCA, Birds Canada and volunteer support, the Marsh Monitoring Program continued to take place at a number of wetlands throughout the Detroit River.

National Urban Park

In August 2021, the Government of Canada announced interest and support to the City of Windsor to explore the possibilities of turning some of the city's most ecologically sensitive areas within the Ojibway Prairie Complex into a National Urban Park. In Canada and around the world, there is growing awareness of the importance of urban parks as essential places for conservation, recreation, learning, and mental and physical wellbeing.

Following an announcement on August 4th by the Honourable Jonathan Wilkinson, Minister of Environment and Climate Change and Minister responsible for Parks Canada, to launch a new program to support the creation of a network of national urban parks, the Honourable Karina Gould, Minister of International Development, joined Drew Dilkens, Mayor of Windsor, in Windsor, Ontario, to announce the signing of another statement of collaboration to explore the potential of a national urban park in the area.

A national urban park in Windsor would be readily accessible to citizens and provide opportunities to connect to, and learn about, local nature and culture. The proposed site for

the potential national urban park includes lands within the Ojibway Prairie Complex. Parks Canada and the City of Windsor will also consider the possibilities for including adjacent properties within the boundary for the proposed park.

Lower Detroit River Important Bird and Biodiversity Area and Christmas Bird Counts

The globally significant Lower Detroit River Important Bird Area (IBA) which extends from the north end of Fighting Island to the mouth at Lake Erie, is important for congregations of birds and waterfowl. For several decades, the Lower Detroit River has been identified as a significant late fall staging and wintering area. On average, more than 8,000 Canvasback (greater than 1% of the estimated North American population), and 7,000 Common Mergansers (greater than 1% of the estimated North



Image 9 - A heron watches for fish from the rocks.

American population) are recorded each year during the annual Christmas Bird Count. At least four species of birds are regularly present in significant numbers along the lower Detroit River: Ring-billed Gulls during the breeding season, and three species of waterfowl (Canvasbacks, Redheads, and Common Mergansers) during the late fall and winter. Other waterfowl species commonly observed on the river include: Greater Scaup, Lesser Scaup, Common Goldeneye, and Bufflehead (Important Bird Areas Canada, 2021).

The Christmas Bird Count is North America's longest-running citizen science project, conducted on one day between December 14 and January 5. Counts are carried out within a 24km diameter circle and are organized by groups, birding clubs or naturalists (Birds Canada, 2021). Locally, members of the Essex County Field Naturalists' Club spearhead the efforts of the Christmas Bird Count in Windsor-Essex, and include the Detroit River.

Periodic Waterfowl Surveys

Waterfowl rely on the coastal wetlands within the Detroit River for staging and foraging to support their energetic needs during the demanding migratory periods. Environment and Climate Change has carried out periodic surveys of waterfowl abundance, species composition and distribution in both spring and fall since the 1970s.

Overall, the population status of many waterfowl species in the Detroit River has improved since the 1970s, as noted in an extensive survey report published in 2013. While assessment complexities include regional population versus continental scale monitoring, it is clear that habitat restoration and conservation in the Detroit River are extremely important and contribute to healthy populations of waterfowl locally.

2011

10 Year Anniversary Canadian Heritage River Designation Celebration

More than 100 people joined dignitaries from Canada and the US at the Windsor waterfront to celebrate the 10 Year Anniversary Celebration of its designation as a Canadian Heritage River.

Detroit River Calendar Contest

The DRCC held a calendar drawing contest for elementary school children to decorate the 2012 Detroit River calendar. The calendar was published and printed for the public to use in 2012.

Amherstburg Wastewater Treatment Plant Upgrade and Expansion

An upgrade and expansion of the Amherstburg Wastewater Treatment Plant was completed. The upgrades accommodate the anticipated population growth of the Town of Amherstburg and improve water quality in the Detroit River.

Biodiversity Conservation Strategy Implementation

The primary focus of the Biodiversity Conservation Strategy was to implement large scale habitat restoration projects in priority areas of the Detroit River AOC. In 2011, 23 hectares of habitat was restored.

Brock Street Dock Cleanup

Approximately 35 volunteers worked together to cleanup 12 tonnes of waste from a section of the Detroit River shoreline adjacent to Brock Street Dock in west Windsor.

Detroit River/Canard River Stewardship Initiative

The Essex County Stewardship Network (ECSN) continued to work with landowners and other organizations to improve water quality/quantity and natural habitats.

Rural Non-Point Source Pollution Remediation Program

In 2011, five buffer strips, three soil erosion control structures, four fragile land retirement (tree planting) projects, and six septic system upgrade projects were completed.



Image 10 - Volunteers donate their time and energy to help remove litter from the Detroit River shoreline.

2012

Canadian Detroit River Remedial Action Plan (Stage 2) Released

The DRCC held an event on January 25, 2012 at the Art Gallery of Windsor to release the DRCC RAP Stage 2 report.

Sediment Contaminant Mapping and Characterization Study

In 2012, a comprehensive study took place by multiple partners to compile information about known contaminants at 65 locations in the Detroit River.

Detroit River Shoreline Assessment

A Detroit River Shoreline Assessment was substantially completed, which involved accessing approximately 1,000 properties along the Detroit River to collect information on the biological and engineering (structural) characteristics of the shoreline.



Image 11 - Shoreline assessments gather important information about the state of the Detroit River.

Wastewater Education Video

The City of Windsor and the Detroit River Canadian Cleanup partnered to create a wastewater video to help de-mystify the topic and to educate viewers.

Black Oak Heritage Park Cleanup

On April 21, 2012, 52 dedicated, enthusiastic volunteers removed picked up 5.5 tonnes of debris and 189 tires from Black Oak Heritage Park.



Image 12 - Volunteers clean trash from public spaces so that they can continue to be enjoyed.

GLIER Native Plant Garden

In October 2012, with help from the local community, staff and students at the Great Lakes Institute for Environmental Research (GLIER) at the University of Windsor planted a native wildflower garden at the front entrance.

Shoreline and Fish Habitat Restoration

A broad partnership of organizations worked together to restore 200m of shoreline at the River Canard Park, co-owned by the Town of LaSalle and the Town of Amherstburg, to improve fish habitat for over 25 fish species and provide erosion protection.

Septic Awareness Program

The DRCC and ERCA, with funding support from Environment Canada, continued to deliver an awareness project to help landowners learn more about septic systems and their maintenance.

Rural Non-Point Source Pollution Remediation Program

In 2012, a total of 29.5 acres (11.9 hectares) was restored to Carolinian forest at 6 sites. Additionally, a 0.5 acre wetland was constructed through this project.

Source Water Assessment Report

Through the source water protection program, a Source Water Assessment Report identified intake protection zones in Detroit River intakes that serve the A. H. Weeks (Windsor) water treatment plant. In those zones, drinking water threats related to sewage bypass and combined sewer overflows have been identified. Source protection policies have been developed to mitigate the identified threats.

Reproductive Health Studies

In 2012, Detroit River researchers completed studies on the reproductive health of Black-Crowned Night Herons and Northern Leopard Frogs.

Children's Song

A professional singer/songwriter (Ashley Moffatt) was hired to produce and record a children's song about the Detroit River. The song was distributed to local teachers, shared through the DRCC newsletter, website and Facebook page.

Wastewater Public Service Announcement

A short 30 second public service announcement about Windsor wastewater management aired on CTV from April to September.

Community Rally for Ojibway Shores

The Windsor Essex community rallied to ensure that Ojibway Shores, the last natural section of the Detroit River, was protected from development. Thanks to this effort, development of this important property will be delayed, allowing for comprehensive environmental inventory and assessment, and consideration of options for longer term protection.



Image 13 - The Ojibway Shores area is the last natural section of the Detroit River.

2013

Essex Region Natural Heritage System Strategy (ERNHSS)

The purpose of this study was to produce a spatial database of all natural areas in the Essex Region; conduct an analysis of the terrestrial, wetland, and riparian habitats to identify the extent of existing natural vegetation; and to prioritize opportunities for habitat restoration and enhancement.

Expansion of the Fighting Island Fish Spawning Reef

Building on the success of the spawning reef constructed in 2008, an additional 1.25 acres of spawning habitat was created at the bottom of the Detroit River adjacent to the existing one at Fighting Island.

Shoreline Restoration and Enhancement

A project to restore and enhance 315 m of shoreline for fish habitat at Lafarge Inc., a major industrial site along the Detroit River, was completed.

Biodiversity Conservation Strategy Implementation

Five buffer strips were planted, two soil erosion control structures were installed, and five fragile land retirement (tree planting) projects and six septic system upgrade projects were completed.

Fish Populations Study

In order to assess the condition of Detroit River fish populations, a study was initiated using data collected from numerous sources from a present and past large-scale time perspective.

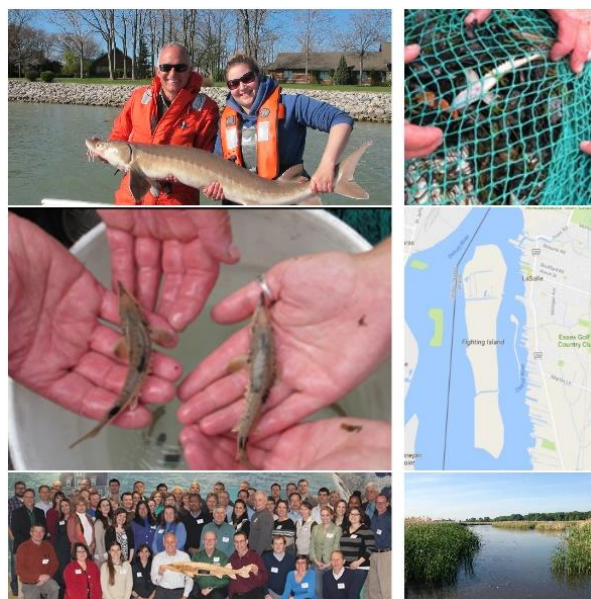


Image 14 - Post-construction monitoring indicates that the spawning reef has continued to increase the productive capacity of spawning habitat for Lake Sturgeon (and other fishes) in the Detroit River.

2014

Rain Gardens

Several demonstration rain gardens were installed in the Detroit River watershed.

Wastewater Public Service Announcement

A short 30 second public service announcement about Windsor wastewater management aired on CTV from April to September 2014 as well as at two local Cineplex Odeon movie theatres for three weeks.

Beach Closings Re-designation

Beach Closings was initially designated as 'impaired' due to wastewater treatment plant bypasses and combined sewer overflows during heavy rainfall events. The DRCC reviewed E. coli bacteria data collected at two Detroit River locations (McKee Park and White Sands Conservation Area) compared to two nearby reference beaches (Sandpoint and Holiday Beach) between 2009 and 2011. Levels of E. coli in and near the Detroit River rarely exceeded the beach closure benchmark. Additionally, the results collected for this assessment indicate that the Detroit River sampling sites were not different from the upstream and downstream locations, Sandpoint and Holiday Beaches.

Tainting of Fish and Wildlife Flavour Re-designation

In May, the Tainting of Fish and Wildlife Flavour BUI was re-designated to 'not impaired' and a binational celebration was held on Fighting Island with media in attendance.

Rural Non-Point Source Pollution Remediation Program

In 2014 seven buffer strips were planted, two soil erosion control structures were installed, and three septic system upgrade projects were completed.

Detroit River Canadian Shore Restoration Alternatives Selection Manual

The DRCC Restoration Alternatives Selection Manual was created to provide guidance on designing shoreline protection along the Detroit River.

Shoreline Design Manual

The Essex Region Conservation Authority created a public-friendly, visually appealing manual that describes the various options for shoreline restoration that are possible along the Canadian side of the Detroit River.

Ojibway Prairie Complex BioBlitz

As part of the Ojibway Shores study, the Essex County Field Naturalists scheduled a BioBlitz in June. Over a 24-hour period, participants surveyed flora and fauna in the Ojibway Complex through to the Spring Garden Natural Area. Experts found 1120 species of flora and fauna, including 12 species never-before recorded in Canada. Forty-five different orders of organisms were identified; plants and invertebrates made up the largest percentage of species found.

Flood and Erosion Protection

Flood and erosion protection works were undertaken along Little River and the Grand Marais Drain, part of the Detroit River watershed.

Biodiversity Conservation Strategy Implementation

A total of 12 hectares (30 acres) were restored to Carolinian upland forest or tallgrass prairie at five sites.

Mill Street Waterfront Improvements

The Windsor Port Authority undertook shoreline and in-water habitat improvements at the new HMCS Hunter location at the Mill Street dock in Windsor.

Fish Tumours: Food Web Bioaccumulation Model

In 2014, work by Dr. Ken Drouillard at GLIER developed a model to determine a tolerable Polycyclic Aromatic Hydrocarbons (PAHs) daily intake by fish and to determine fish exposure by examining the sediment and water chemistry at various zones in the Detroit River. Results show that work required on the Canadian side of the river to help reduce tumours in fish is minimal.



Image 15 - Scientists assess Brown Bullhead collected from the Detroit River for tumors and other deformities.

Restrictions on Fish Consumption Research

The Great Lakes Institute for Environmental Research (GLIER) at the University of Windsor has recently done extensive work to characterize the spatial distribution of mercury in sediments of the Detroit River.

Fish Populations Study

A study to determine the status of fish populations using data collected from numerous sources was completed.

Turkey Creek PCB Cleanup

In October 2008, 975 cubic metres of PCB-contaminated sediment was removed from the Grand Marais drain east of Walker Road in order to attain a cleanup goal of 1 ppm PCB. The post-remediation monitoring and reporting of the Turkey Creek PCB cleanup site was completed in 2014. Data analysis showed that concentrations of PCBs in sediment, water, and forage fish have decreased over time at the remediated areas.

Snapping Turtle Monitoring

A study on Snapping Turtle hatching success and hatchling deformities took place within the Detroit River watershed.

2015

Wastewater Public Service Announcement

A short 30 second public service announcement about Windsor wastewater management and the effect on the Detroit River aired on CTV from December 2015 to February 2016.

Rt. Hon. Herb Gray Parkway

The Rt. Hon. Herb Gray Parkway was part of the Province's long-term transportation solution to improve the movement of goods and people through Canada's busiest gateway - the Detroit-Windsor borders. Construction ended officially on October 2 2015. A significant effort during this project was undertaken to benefit biodiversity that provided places of refuge for rare and endangered species, provide erosion control, develop wetlands and fisheries, and plant locally native species for pollinators, recreation and create traditional knowledge and cultural elements. In recognition of the global, national, and provincial significance of prairie remnants in the Windsor-Essex region, special care has been taken in the Parkway's design to limit the impact on ecologically significant areas. As a result, less than four hectares of higher quality vegetation were impacted by construction activities. Of the 160 hectares of green space associated with the Landscape Plan for the Parkway, 74 hectares are created ecological landscapes that feature Tallgrass Prairie and Oak Savannah. Outside the Parkway corridor, an additional 60 hectares of land, including wetland preservation areas and actively managed species at risk habitat, have been preserved.



Image 16 - Construction of the Herb Gray Parkway was carefully executed to limit impact on ecologically significant areas and species within the Parkway project area.

Windsor Jewish Community Centre Water Festival

The DRCC participated in the Windsor Jewish Community Centre's water festival.

Second Ojibway Prairie Complex Bioblitz

A second Bioblitz took place on the Ojibway Prairie Complex.

Little River Flood Control Sheet Steel Wall Repair Project

The Little River Flood Control Sheet Steel Wall repair project was completed in early 2015. Approximately 120 metres of existing sheet steel wall was replaced with new sheet steel wall.

Grand Marais Drain Channel Improvements

Channel improvements were undertaken to approximately 140 metres of the Grand Marais Drain Flood Control Channel in the City of Windsor.

Water Quality Improvements

Nine water quality improvement projects were conducted in the Detroit River watershed.

Benthic Education Program

In 2015, the DRCC joined up with ERCA to educate students on the importance of protecting water quality and how to use benthic invertebrates (insects) as a way to monitor environmental health.

Windsor Detroit Bridge Authority Environment Stakeholder Focus Group

Experts from both ERCA and the DRCC began attending quarterly Environmental Focus Groups with the Windsor Detroit Bridge Authority (WDBA) to provide insight and input into multiple aspects of the new Gordie Howe International Bridge project such as construction, environmental considerations, community outreach and more.

Snapping Turtle Monitoring Results

A study on Snapping Turtle hatching success and hatchling deformities took place in 2015. Due to their long life span, much of which is spent in or around water, snapping turtles provide excellent insight into environmental health. Locally, researchers monitor turtle nests to ensure turtles are hatching normally and to ensure mercury and polychlorinated biphenyls (PCBs) are not accumulating in eggs. In 2014 and 2015, there was no significant difference in hatching success or deformities between samples from the Detroit River area and samples collected at Long Point. Furthermore, PCB levels in eggs have been decreasing over time.

Tree Swallow Monitoring

Environment and Climate Change Canada researchers erected 25 nest boxes at four locations along the river. These boxes were be monitored 2-3 times per week during the nesting season for three years. Data was collected on reproductive success (clutch size, hatching success, fledging success, weight at fledging) and contaminants in eggs including PCBs, mercury, and polybrominated diphenyl ethers (PBDEs).

Fish Habitat Study

Approximately 20 sites were assessed by researchers on the Detroit River for suitability to create habitat for juvenile fish. Many of these potential restoration actions include installing breakwaters to create slow water areas in order to encourage the establishment of vegetation, which makes good nursery habitat for young fish of many species.

Restrictions on Fish Consumption Research

The Great Lakes Institute for Environmental Research (GLIER) from the University of Windsor and researchers from the University of Michigan continue to build on their previous work in applying a new eco-sleuthing technique, known as mercury isotope analysis, to “fingerprint” sediment mercury sources. Their recent study showed that high concentration mercury hotspots in U.S. and Canadian waters could be distinguished based on these “fingerprints”. Additional sediment and invertebrates samples were collected in the Detroit River in 2015 and mercury isotope analysis was completed. In the future, these distinct mercury “fingerprints” could be used to assess what sources of mercury are getting into fish in different regions of the river.

GLIER has also been synthesizing and analyzing geospatial data in order to develop new probabilistic models for the purpose of assessing the Restrictions on Fish Consumption BUI. A geodatabase was developed to populate, store, query, share, and view BUI related data. The data will be analyzed and used to generate synthesized models via artificial intelligence approaches.

Phytoplankton and Zooplankton Monitoring

Phytoplankton (tiny plants) and zooplankton (weak-swimming microscopic animals) are key components of aquatic ecosystems, forming the base of most marine food webs. Environment and Climate Change Canada analyzed 65 archived plankton samples collected in different surveys areas. In 2015, zooplankton samples were taken at various sites along the Detroit River.

Biodiversity Conservation Strategy Implementation

In 2015, a total of 12 hectares (30 acres) were restored to Carolinian upland forest or tallgrass prairie. Two wetland projects were also completed.

2016

Little River Enhancement Group 25 Year Anniversary

In February 2016, the Little River Enhancement Group (Lil' Reg) celebrated 25 years of on-the-ground stewardship in the Little River watershed.

Grand Marais Drain and Channel Improvements

180 metres of open channel and drain improvements were conducted in the Grand Marais drain, part of the Detroit River watershed, to improve flow and flood protection.

Contaminant Mapping and Source Trackdown Study

Researchers from GLIER and the University of Michigan are applying mercury isotope analysis to determine where the contaminant sources in the sediment are coming from.

Fish Movement Monitoring

GLIER researchers are also collaborating with the Great Lakes Acoustic Telemetry Observation System (GLATOS), a bi-national organization of researchers and government managers, to monitor the movement of multiple fish species in the Detroit River using acoustic telemetry.

Freshwater Restoration Ecology Centre (FREC)

GLIER has completed the building phase for the "Freshwater Restoration Ecology Centre" located on the Detroit River in LaSalle.

Nutrients Research within St. Clair and Detroit River System

With funding from the Erb Family Foundation, researchers at the University of Michigan are investigating the sources, dynamics, and impacts of nutrients within the St. Clair-Detroit River and its watershed by developing watershed, urban, and lake models.

Water Quality and Loadings Monitoring

In partnership with the United States Geological Survey (USGS), water quality has been monitored in the Detroit River and loadings calculated by Environment and Climate Change Canada (ECCC) for the period October 2014 through September 2015.

2017

Little River Cleanup

In April 2017, more than 50 volunteers gathered to support the Caesars Windsor Code Green Cleanup along the Little River. Approximately 8 tonnes of litter was removed from the area.

Brown Bullhead Collection and Tumour Assessment

Through the Remedial Action Plan, researchers assessed fish tumours or other deformities by collecting Brown Bullheads for liver tumour analysis.

Benthos and Sediment Chemistry Research

In 2016, researchers reviewed sediment chemistry and benthos data collected from extensive sampling events. They found that the benthic community in the Detroit River is typical of what a connecting river environment would support. There are no toxic effects to the benthos from the sediment and the benthic community is similar to upstream sites in the river.



Image 17 - Scientists collect benthos from the Detroit River in 2016.

Lake Sturgeon Research

The DRCC and ERCA joined U.S. Fish and Wildlife Service researchers on the Detroit River in April 2017, to collect Lake Sturgeon data through ongoing mark and recapture studies.

Ojibway Shores Natural Heritage Report Release

Essex County Field Naturalists' Club (ECFNC), with permission from the Windsor Port Authority, and in partnership with the DRCC PAC, CEA and ERCA released the Ojibway Shores Natural Heritage Report.

2018

Detroit River Canadian Cleanup Story Map

A new interactive mapping tool that tells the cleanup story of the Detroit River was released in 2018 and [can be viewed on the DRCC website](#).

Detroit River Shoreline Management Strategy

Together with the Detroit River Shoreline Assessment (ERCA, 2012) and the Detroit River Shoreline Design Manual (ERCA, 2016), the Detroit River Shoreline Management Strategy was published.

Collavino Wetland Restoration

A new habitat project in the River Canard is complete. The Collavino wetland is 75 acres in size and been designated as a Provincially Significant Wetland. With funding support from

ECCC, ERCA repaired the existing dyke and installed pumping infrastructure and water level control structures to manipulate water levels on the inside of the dyke.

Pêche Island Habitat Restoration

Progress was made towards constructing the biggest habitat project, to date, on the Canadian side of the Detroit River. The project consists of a soft shoreline revetment on the northeast side of Pêche Island and 9 sheltering islands on the north side of Pêche Island. Once fully constructed, the project will provide approximately 105,000m² of calm water area that fish can use to spawn and forage, and where aquatic plants can establish.

Calm water areas, such as the one created by this project, are rare in the upper Detroit River. Once the calm water area is established, it is expected that it will become an important habitat area for fish and other wildlife.



Image 18 – An aerial view of Pêche Island.

Grand Marais Drain Improvements

Improvements along the Grand Marais drain continued in cooperation with ERCA and the City of Windsor.

2019

Restrictions on Dredging Re-designation

Regular dredging occurs every three to four years within one area of the Canadian Lower Detroit River to maintain required water depth for commercial navigation. Options for beneficial reuse of the material are limited and the sediment is disposed of in a confined disposal facility in accordance with provincial guidelines. Since regulatory oversight in navigational dredging activities is achieved through the federal and/or provincial environmental protection legislation and approval processes, the DRCC recommended that the Restrictions on Dredging Activities BUI is no longer impaired.



Image 19 - Dredging in the Detroit River.

In accordance with the provisions in the Great Lakes Water Quality Agreement (GLWQA), ECCC and the Ontario Ministry of Environment, Conservation and Parks (MECP_ completed a

comprehensive review of our report and agreed with the recommendation to re-designate to 'not impaired'.

Phytoplankton and Zooplankton Monitoring

From July to November 2019, scientists from Fisheries and Oceans Canada (DFO) sampled 8 sites in the Detroit River to assess phytoplankton and zooplankton community composition in the water. The scientists examined the type, biomass, and productivity of zooplankton, phytoplankton, and microbes within the river. Researchers are in the process of preparing an assessment of the data including investigating any changes in zooplankton and phytoplankton along nearshore/offshore and upstream/downstream gradients.

Detroit River Consumption Advisory Research

When contaminant levels, such as mercury and polychlorinated biphenyls (PCBs), are high in fish, consumption advisories may recommend that people and sensitive populations (e.g., children, pregnant women) limit or avoid eating certain species of fish caught in specific areas of the Detroit River. Researchers from GLIER have been conducting several studies to identify whether consumption advisories for indicator species (e.g., walleye, brown bullhead, and smallmouth bass for sensitive populations) are similar to other non-AOC Great Lakes sites.

To assess this BUI, GLIER developed the Detroit River Fish Consumption Hazard Assessment Model to predict contaminant (PCBs & Mercury) bioaccumulation that would lead to consumption advisories. They have also collected field data to “fingerprint” sediment mercury sources. Their studies have shown that mercury concentration hotspots can be determined using these “fingerprints”.

Fish Consumption Survey

The DRCC launched a fish consumption survey to collect data on what people catch and eat from the Detroit River.

Detroit River Coalition

For the first time in the history of the Detroit River, a group of passionate environmental organizations on both the Canadian and American sides of the Detroit River have come together to form the Detroit River Coalition (DRC). The coalition is made up of the Detroit Riverfront Conservancy, Belle Isle Conservancy, Green Living Science, Friends of the Detroit River, Friends of the Rouge Watershed, and the Michigan Department of Natural Resources (Milliken State Park and Harbor and the Outdoor Adventure Center) on the American side, and the Detroit River Canadian Cleanup and Essex Region Conservation Authority on the Canadian side of the river.

Little River Cleanup

In 2019, volunteers removed eight shopping carts, one lawn chair, one bike, one garbage pail, two recycle bins, garden hoses, two tents, wood, one aquarium, a stove pipe baffle and an additional 52 bags of landfill and recyclable materials from the banks and channel.

How to Crew Orientation

In preparation for the large Earth Day community planting, members of the How to Crew received in-depth tree planting and care training to assist with implementing the planting plan at the spring celebration. The How to Crew assists ERCA by providing quality control measures during community planting events to ensure the long term growth and survival of the trees.

Tree Health and Growth Citizen Science Survey

The DRCC and ERCA hosted a citizen science survey workshop to collect tree health and growth data from a sample of the Earth Day trees planted in the spring.

U.S. Sediment Remediation Presentation

In October 2019 the DRCC PAC hosted a presentation on the progress of sediment remediation efforts on the American side of the Detroit River.

2020

City of Windsor Ecopassage across the Ojibway Parkway

As part of the Community Benefits program hosted through the WDBA, \$1.5 million seed money was committed to the City of Windsor for a wildlife crossing to span the Ojibway Parkway and begin to reconnect Black Oak Heritage Park to the rest of the Ojibway Prairie Complex. The City set aside \$250,000 for an environmental assessment and bridge design. The Municipal Class Environmental Assessment study began in 2020 and continued into 2021.

Detroit River Binational Earth Day Celebrations

In celebration of Earth Day, the DRCC hosted in partnership with members of the DRC, a virtual pledge to challenge individuals from Canada and the United States to choose one single-use plastic item used frequently and share how they switched to recycled or reusable items. The pledge was successful in engaging 163 individuals who shared their replacement of a single use plastic item at home with a more sustainable option.

Pêche Island Restoration

In 2020, the DRCC and ERCA completed all permits required to begin construction of the Pêche Island erosion mitigation and fish habitat project. Construction of the project began mid October.

Tree Swallow Monitoring

Environment and Climate Change Canada's wildlife toxicologists have completed three years of field work for reproductive health assessments on tree swallows for the Bird and Animals Deformities BUI. These studies evaluate hatching success and contaminant levels in their tissue.

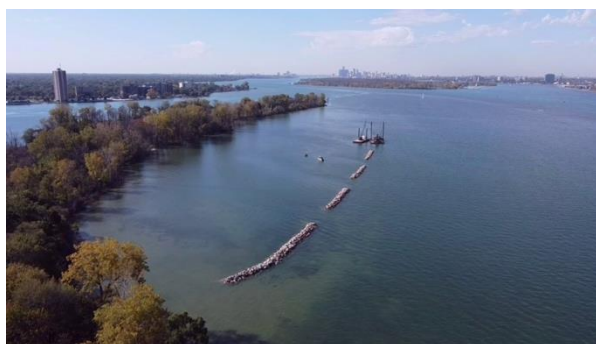


Image 20 – Aerial photo of the Pêche Island restoration project.

Restrictions on Fish Consumption Monitoring

Researchers analyzed data to examine trends in PCB and mercury concentrations in indicator fish (brown bullhead, smallmouth bass, and walleye).

Fish and Wildlife Habitat and Populations Sub-criteria

The Habitat Work Group began the process of creating sub-criteria of degraded fish and wildlife populations and loss of fish and wildlife habitat BUIs. These sub-criteria will determine if the delisting criteria for these two BUIs have been met.

Phytoplankton and Zooplankton Monitoring

Researchers completed analyzing data from 2019 on phytoplankton and zooplankton populations in the Detroit River. Their analysis revealed no indication of impairment in these populations and the DRCC proceeded with next steps to change the status of this BUI from 'requires further assessment' to 'not impaired' in 2021.

Phytoplankton and Zooplankton Virtual Open House

In December 2020, the DRCC hosted a virtual open house to share research findings on the degradation of phytoplankton and zooplankton populations and the proposed change of status of this beneficial use to not impaired.

Collavino Wetland Restoration

ERCA began implementing a management plan in 2020 to remove invasive *Phragmites australis* through water control and herbicides to enhance the wetland habitat for marsh birds and other wildlife. The management plan is expected to increase native plants presence within the wetlands to improve habitat use.

Detroit River Coalition Strategic Planning

In late 2020, the DRC engaged EDSI Consulting to create a strategic plan for the newly formed coalition. The work occurred from January to May 2021 where members met weekly to identify the direction and management of the Coalition.

2021

Degradation of Benthos Re-designation

Over the past two decades a series of intensive investigations into the sediment quality and benthos health of the Detroit River were conducted. Results of these studies showed that sediment contaminants declined steadily between 1999 and 2013 and that the vast majority of the Canadian side of the Detroit River showed minimal benthos impairment and potential for bioaccumulation. These results indicate that the benthos communities are now considered to have recovered to a point where they are no longer impaired in the Detroit River.

Fish Tumours and Other Deformities Re-designation

Although contaminants are still present in sediments in the Detroit River Area of Concern (AOC), the prevalence of tumours in brown bullhead (our indicator species) are decreasing. Research results show that liver tumours in brown bullhead have decreased to less than 1%, a rate that is lower than the Great Lakes background of 2%. These results indicate that liver

tumours in the Detroit River are no more prevalent than other Great Lakes sites, and the Fish Tumours and Other Deformities beneficial use is no longer considered impaired for the Canadian side of the Detroit River.

Detroit River Earth Day Celebrations

The DRC began Earth Week with a public and media friendly press conference introducing the Coalition, its members and plans for Earth Week in both Canada (virtual) and US (virtual and in person). Participants helped to cleanup litter along the Detroit River waterfront, along urban trails and across Belle Isle. A virtual Detroit River bingo event was hosted as well as a joint presentation between the DRCC and the Friends of the Detroit River highlighting binational habitat projects. A month long art and photography contest was held with submissions from over 20 people with prizes for winners sent in the mail.

120 Year Old Lake Sturgeon Caught by Researchers

A once in a lifetime catch for the Alpena Fish and Wildlife Office of the U.S. Fish and Wildlife Service! A 240 lbs, 6'10" long lake sturgeon with a girth of nearly 4' was caught on the American side of the Detroit River. This fish is one of the largest lake sturgeon ever recorded in the U.S.

Based on its girth and size, it is assumed to be a female and that she has been roaming our waters over 100 years. So, she likely hatched in the Detroit River around 1920 when Detroit became the 4th largest city in America. She was quickly released back into the river after being processed.

20th Anniversary of the Detroit River Canadian Heritage River Designation

July 19 2021 was the 20th anniversary of the Detroit River receiving the Canadian Heritage River designation. This milestone was celebrated through traditional and social media channels.

Colonial Waterbird Monitoring Results

Environment and Climate Change Canada's wildlife toxicologists have completed a three-year investigation into the reproduction and contaminant exposure in nesting colonial waterbirds in the AOC. The results support a recommendation of no impairment for reproduction associated with contaminant-induced effects in colonial waterbirds nesting in the AOC.

Mapping Exercise Quantifies 20 Years of Habitat Restoration

An in-depth mapping exercise was undertaken by ERCA with support from ECCC to map habitat restoration efforts within the Detroit River watershed. Between 2000 and 2020, a total of over 3.8 million m² (3.8 km²) trees were planted. Additionally, over 10,100 m of shoreline has been softened as a part of the habitat restoration projects.

Windsor Detroit Bridge Authority and Sandwich Windsor Litter Cleanup

Volunteers removed accumulated debris and litter at Sandwich at McKee and Queen's Dock Parks in Sandwich. Funding for the Sandwich Litter Cleanup was provided by the Gordie Howe International Bridge Community Benefits Plan.

Post Construction Monitoring

Researchers from DFO were out on the Detroit River earlier this month to assess the fish community and aquatic vegetation establishment in the backwater area behind the four sheltering islands constructed for the Pêche Island project. Vegetation is starting to establish and several types of fish were caught including largemouth bass, brooks silverside, log perch, and yellow perch.

Cultural Heritage Values - Significant Actions, Research or Studies (2011 to 2021)

2012

War of 1812 Bicentennial

On August 25, 2012, The City of Windsor, along with its community partners, presented an all-day family-fun festival to commemorate the War of 1812 and celebrated 200 years of peace.

Roots to Boots Bicentennial Friday through Sunday was organized by the Town of Amherstburg to commemorate the War of 1812.

Pêche Island Day

In September, 430 people boarded one of the four boats or a large 18-person canoe and crossed the Detroit River to discover Pêche Island, a City-owned park that is only accessible by boat. Once on the island, visitors learned about the island's unique history and ecology.

SOS: Saving our Strait – Restoring Our River Together!

A museum exhibit entitled *SOS: Saving our Strait – Restoring Our River Together!* was on display from June-December 2014 at Windsor's Community Museum. This exhibit depicted the last 60 years of tumultuous history surrounding the Detroit River and the international attention this Heritage River has received in the cleanup effort.



Image 21 - Residents use boats to enjoy Pêche Island Day.

2015

Amherstburg Freedom Museum 40th Anniversary

In 2015, the North American Black Historical Museum celebrated its 40th anniversary. The museum began as a historic church and expanded to include landmark grounds and a museum hall accessible to the public. In 1999, the site was designated as the first Black national historic site in Canada. The museum also changed its name from the North American Black Historical Museum to the Amherstburg Freedom Museum.

SOS: Saving our Strait – Restoring Our River Together! Exhibit

The SOS: Saving our Strait – Restoring Our River Together! Exhibit was on display at the Windsor Jewish Centre for two weeks in November.

2016

Chimczuk Museum Gallery One: The River and the Land Sustain Us

In 2016, the River and the Land Sustain Us was curated and opened to the public. This is the main gallery at the Chimczuk Museum and features a Bi-lingual Permanent Exhibit that tells the history of the City of Windsor and residents.

Chimczuk Museum Original Peoples Culture and Legacy Gallery

In 2016 the Original Peoples Culture and Legacy Gallery was curated and reflects the culture, heritage, and contemporary issues of the local First Nations and Métis communities.

World Rivers Day Celebration

World Rivers Day was celebrated on Saturday September 24th 2016 by the DRCC and included a litter clean up in McKee Park and along Russell Street as well as kayak demonstrations from Windsor Adventure Inc.

2017

Celebrating2017 – a Year to Remember

The City of Windsor marked its milestone 125th birthday, while also commemorating the 150th anniversary of Ontario and Canada. As part of Celebrating2017, the City of Windsor organized or hosted several Signature Events – inclusive, immersive, interactive and energizing can't-miss events that offered unforgettable experiences all year long. [Read the full list on the City of Windsor's website.](#)

Eau Canada! Canada150 CHRS Video Project

June 11 2017 was Canadian Rivers Day, and to celebrate, the Canadian Heritage Rivers System released their [Canada150 Project: Eau Canada which can be viewed on YouTube](#). Paddleboarders on the Detroit River contributed to this collective project.

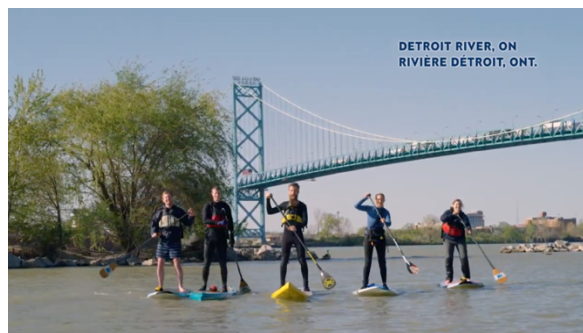


Image 22 - Paddleboarders on the Detroit River sing "Oh Canada!" for Canadian Rivers Day.

Eau Canada 150th Birthday Paddle

As part of a national effort to recognize and celebrate Canada's Heritage Rivers, as well as the country's 150th birthday, ERCA and local partners hosted free paddling events throughout the Detroit River watershed on Sunday, June 4.

World Rivers Day Celebration

On Saturday September 23 2017, the DRCC celebrated World Rivers Day by arranging free river crossings to Pêche Island. With the help of Windsor Essex County Canoe Club, the Great Lakes Institute for Environmental Research at the University of Windsor, and Captain Dan Leavoy and his Fish Tank, 530 people made their way to the City of Windsor's hardest to get to park.

2018

Open Streets Festival

The City of Windsor hosted the fourth Open Streets event Sunday September 23rd, which happened to fall on World Rivers Day in 2018. The DRCC as well as Essex Region Conservation spent the day sharing river stories and celebrating with the community.

Detroit Heritage River Story Map

The Heritage River story maps project was complete and includes the Detroit River. [The story map can be viewed on the CHRS website](#).

World Rivers Day Celebration

The DRCC celebrated World River's Day at Open Streets, a festival along the Detroit Riverfront on Sunday, September 23.

Archaeological Dig at Ambassador Bridge

In 2018, an Archaeological dig began at an Ambassador Bridge site owned by Walpole Island First Nation. The dig is part of the construction of the new span of the Ambassador Bridge. Both Walpole Island First Nation and the Ambassador Bridge joined together to investigate the archaeological potential of the construction site, as the work is mandated by the Canadian government. AECOM, an archeological firm was hired by Walpole Island First Nation, and the Canadian Transit Company funded the project. Discoveries of the dig include about 30,000

artifacts ranging from a couple hundred years old to nearly 10,000 years old, according to carbon dating.

Love your Detroit River Video

A video highlighting 30 years of progress and the local community's love for the Detroit River was created by the DRCC and [can be viewed on YouTube](#).

2019

Community Benefits Plan Revealed by the Windsor Detroit Bridge Authority

The Gordie Howe International Bridge project is being undertaken to deliver much needed transportation improvements for international travellers and provide jobs and opportunities for growth to the Windsor-Detroit region.

2020

Caldwell First Nation and the Detroit River

In 2020, Caldwell First Nation achieved reserve status for an 80-hectare property on their traditional territory, in Leamington, Ontario. This land was in their ancestral home, for which they have been fighting for 230 years. Their traditional territory stretches from the Detroit River, to Long Point on the north shore of Lake Erie.

Detroit River Indigenous Engagement Strategy

Respecting the history of Indigenous peoples and their connection to the Great Lakes, the DRCC began engaging Indigenous communities who are signatories of the McKee Treaty of 1879 and/or have expressed an interest in the restoration efforts of the Detroit River.

To guide community engagement within the AOC, the DRCC developed a Communications Plan (2020-2025) identifying key audiences, tools for engagement as well as key messaging for beneficial use impairment re-designations and stories about the Detroit River.

Amherstburg Freedom Museum 40th Anniversary

In 2020, the Amherstburg Freedom Museum celebrated its 45th anniversary. The museum began as a historic church and expanded to include landmark grounds and a museum hall accessible to the public. In 1999, the site was designated as the first Black national historic site in Canada.

City of Windsor Heritage Week Celebrations

The City of Windsor hosted a variety of heritage celebrations across Heritage Week, February 17 to 12 2020. [The full list of activities can be viewed on the City of Windsor website](#).

Historic Plaques on Sandwich Town Arch Installed

The City of Windsor installed 14 plaques that tell the story of the Tecumseh and Brock monument, archaeological investigations carried out in the Sandwich roundabout, the Detroit River and other culturally significant heritage stories of the region.

Windsor-Essex Land Acknowledgements

In 2020, many organizations, groups and Boards began including a land acknowledgement at their meetings, events and other types of gatherings. A Land Acknowledgement is a formal statement that recognizes and respects Indigenous Peoples as traditional stewards of the land and the enduring relationship that exists between Indigenous Peoples and their traditional territories. Recognizing the land is an expression of gratitude and appreciation to those whose territory you reside on, and a way of honouring the Indigenous people who have been living and working on the land from time immemorial.

2021

Town of LaSalle Celebrates 30 Years

LaSalle was incorporated as a town on June 1, 1991, and became one of the larger communities in Essex County. In 2021, LaSalle celebrated 30 years of being a town. Since becoming a town, LaSalle's population has more than doubled, while still preserving and protecting hundreds of hectares of ecologically important wetlands, woodlots and tall grass prairies that are interconnected by more than 30 kilometres of recreational trails and inland watercourses.

Recreational Heritage Values - Significant Actions, Research or Studies (2011 to 2021)

Ongoing

Annual Fishing Events along the Detroit River

There are many derbies, tournaments, shows, and learn to fish events offered along the Detroit River. These events include the Detroit River Walleye Classic, where anglers launch from the Town of LaSalle's marina and includes a derby for kids. The Windsor Sportsmen's Club hosts an annual kids fishing derby in May at Reaume and Dieppe Parks. Also in June, the Italian Canadian HandiCapable Association's Pat Pagano Annual Fishing Derby is held at Assumption Park. The Windsor Police Association also hosts the Cops and Kids Fishing Derby in June at Dieppe Park. The Riverside Optimist Club Kids Fishing Derby is hosted in May or June at Reaume Park. Tourism Windsor Essex Pelee Island (TWEPI) also hosts the Get Hooked Fishing Tournament which is a socially distanced catch and release event that runs for several weeks. Last, the Detroit River



Image 23 - Fishing is an important and culturally significant activity on the Detroit River.

Canadian Cleanup (DRCC) hosts the Learn to Fish event for families on the licence free fishing weekend every July. For more information about fishing in Windsor-Essex, [visit TWEPI's Gone Fishin' page](#).

Birding Tourism

The Detroit River is located in one of the most biologically diverse parts of Canada between two major waterfowl migration flyways, the Mississippi Flyway and the Atlantic Flyway. This means waterfowl, raptors and songbirds all use the region as important stopover habitat. Bald Eagles and Osprey have returned to nest and it's not out of the ordinary to see hundreds of thousands of hawks and other birds cross it on migration each year. The Lower Detroit River is also an Important Bird Area with IBA Canada for staging waterfowl in the winter.

There are many opportunities throughout the year for bird watching along the riverfront and in areas within the watershed. TWEPI published a Birding in Windsor Essex guide in 2021 that highlights popular birding locations, birding tours and outfitters and guides to learn bird identification. [Visit the TWEPI birding guide](#).

2012

Detroit River Aesthetics Survey

An observational survey of Detroit River aesthetics continued into 2012. Visual observations were taken every 2 weeks at the sites along the river. The data will be used, along with data collected via a public questionnaire in 2010, to review the status of Degradation of Aesthetics (BUI #11). The report was completed in 2013, and this beneficial use impairment was re-designated as no longer impaired in 2014.

2014

Degradation of Aesthetics Re-designation

The aesthetics of the river was identified as 'impaired' in 1991 due to large volumes of combined sewer overflows, discoloured water from U.S. slaughter houses, oil and grease, debris and other types of objectionable deposits. Visual surveys were conducted at 11 sites along the Canadian shoreline from 2011 to 2013. Researchers recorded the presence or absence of several variables that may indicate local pollution problems (e.g., colour, odour, debris). The results of the study indicated that there was no significant, persistent degradation of aesthetics on the Canadian side of the Detroit River.

2015

Creel Survey

In 2015, a partnership between the Michigan Department of Natural Resources, the U.S. Geological Survey and the Ontario Ministry of Natural Resources and Forestry was developed in order to conduct a full creel survey of the Detroit River. This survey provided information to

the DRCC to gather information about the number of hours that anglers fished, what species they targeted, the size of the fish they caught, and whether they released or harvested the fish. This creel provides a snapshot of the recreational fishery measuring the effort, catch, and harvest of fish from the Detroit River.

Anglers put in over 600,000 hours on the river with the majority of recreational fisheries catch and effort at 54% and occurred during April and May in 2015. Anglers caught and harvested over 500,000 White Bass (more than any other species). Walleye is the preferred fish sought out of the Detroit River with 73% targeted and 87% harvested (around 150,000 fish). There were 192,000 Yellow Perch caught, mostly in September (68% at a rate of 4.13 perch per angler hour). Over 100,000 Smallmouth Bass were caught in 2015. Either in May (22%) during the Michigan catch and release season or in September (30%). Of all the Smallmouth Bass caught, 97% were released. Anglers in the Detroit River caught over 4,000 Muskellunge. Most muskies were caught in the spring (April to June); however, it does appear that catches do occur throughout the year. Similar to the Lake St Clair Muskie fishery, 99-100% of all Muskie caught were released.

2016

Herb Gray Parkway Trail

This trail was officially open in 2016 and offers 17 kilometres of multi-use paved trails, set within 120 hectares of green space within two highway extensions and across 11 tunnel tops.

South Coast Adventure Race

The South Coast Adventure Race attracted more than 220 athletes to the region to paddle, cycle and orienteer through the Detroit River watershed, highlighting the unique natural areas of this community.

Bi-National Greenways Vision Map

As a result of a significant Canadian-US partnership, a bi-national Greenways Vision map was created to encourage people to grab their bikes and explore both sides of the Detroit River.

Gordie Howe International Bridge Bike Lanes

Canadian and U.S. partners were delighted to learn that stronger linkages will be made between emerging greenways of southwest Ontario and southeast Michigan via future dedicated bike lanes on the new Gordie Howe International Bridge.

2019

Pêche Island Tours

In 2019, the City of Windsor began operating boat tours to Pêche Island from July to October. Guests were able to explore the island, discover the history and significance of the island, experience naturalized trails, canals and ruins and enjoy unique views of both Windsor and Detroit.

The Detroit River: A World Class Fishery Video

A video highlighting the positive impacts of fish and habitat restoration on the local fishery and recreational opportunities in the Detroit River. [The video can be viewed on YouTube.](#)

Virtual Detroit River Fishing Guide

The DRCC published a virtual fishing guide that is available on their website and covers a variety of local fishing related topics and tips. Visit www.detroitriver.ca/learntofish to read through the guide.

NATURAL HERITAGE VALUES

Background

While the Detroit River was not originally nominated based on its natural heritage values, based on its cultural and recreational significance, the Detroit River was successfully designated as a Canadian Heritage River. Since the designation, many projects have taken place to enhance the river's natural heritage values through dynamic and collaborative partnerships with federal, provincial, regional, and municipal governments, local organizations, educational institutions, and invested individuals.

The Detroit River is a major link in connecting the upper and lower Great Lakes. It also links the largest wetland complex in the Great Lakes – the St. Clair Flats, and the world's largest freshwater delta – the St. Clair Delta, to Lake Erie, the most biologically productive of the five Great Lakes. The landscapes, flora, and fauna of the Detroit River contain many unique, rare, and endangered species of plants and animals not found anywhere else in Canada. The Detroit River is also situated in the Carolinian Life Zone which has the greatest number of both flora and fauna species of any ecosystem type in Canada.



Image 24 - The Detroit River and its watersheds are among the most biologically diverse in Canada.

Condition of Natural Heritage Values Since Designation

Numerous actions have taken place to enhance, restore and protect the Detroit River's natural heritage over the past ten years. Overall, these actions from 2001 to 2021 present a net increase in habitat within the watershed as well as notable returns or population increases of several key species. The Detroit River's Natural Heritage conditions have improved significantly over the last twenty years. Natural area cover has increased and several habitat restoration projects targeting key species have been successful at

improving the reproductive success of those species. The Windsor-Essex community has demonstrated a continued commitment to improving the natural environment of the river. Appendix III outlines a list of Detroit River Species at Risk and their Federal and Provincial statuses.



Image 25 - A monarch butterfly rests on a dense blazing star.

Inventory and Protection of Natural Heritage Features

In 2013, the Essex Region Conservation Authority (ERCA) completed the Essex Region Natural Heritage System Strategy (ERNHSS), as an update to the 2002 Essex Region Biodiversity Conservation Strategy (ERCA, 2013). This study was incorporated into the 2014 County of Essex Official Plan (OP) (Jones Consulting Group Ltd., 2014). Section 3.4 of the County OP (pages 59-75) and contains various natural heritage policies, which designate

significant natural heritage features for protection, based upon the criteria established in the ERNHSS, as well as promote consideration of the restoration opportunities recommended in the ERNHSS. These County policies are to be reflected in local Municipal Official Plans, including those within the Detroit River watersheds.



Image 26 - Marshland along the River Canard.

Restoration Projects

According to recent mapping of habitat restoration projects in the Detroit River and its watershed, a total of 277 habitat restoration projects have occurred since 2000. The majority (179) of these projects occurred in the Canard River watershed (the largest sub-watershed to the Detroit River). Tree plantings were the most common habitat restoration type appearing in 207 projects, followed by wetland restoration (56 projects), prairie restoration (32 projects), shoreline restoration (18 projects), fish habitat projects (15 projects), and native garden plantings (12 projects). Area wise, over 3.8 million m² (3.8 km²) of trees were planted from 2000-2020. Additionally, over 10,100 m of shoreline has been softened as a part of the habitat restoration projects. A map of these efforts can be found in Appendix II of this report, or Figure 3.



Image 27 - Volunteers plant trees at the Earth Day community tree planting event in 2019.

Shoreline Softening

Since the late 1990s, 17 shoreline improvement projects have taken place along the Detroit River and one at River Canard Park (a tributary of the Detroit River). Overall, 61% of the Detroit River shoreline is identified as softened. Softened shorelines more closely mimic the naturally-occurring foreshores on the Great Lakes, and in doing so, provide greater environmental value. That 61% is just inside the 'fair' indicator category of the Lake Erie Biodiversity Conservation Strategy (LEBCS) funded by the US Environmental Protection Agency (US EPA) and Environment and Climate Change Canada (ECCC). The LEBCS establishes soft shoreline habitat quality targets for the Lake Erie connecting channels (Detroit River, St Clair River, and Upper Niagara River), which are recommended to provide critical habitat for the full diversity of native species.

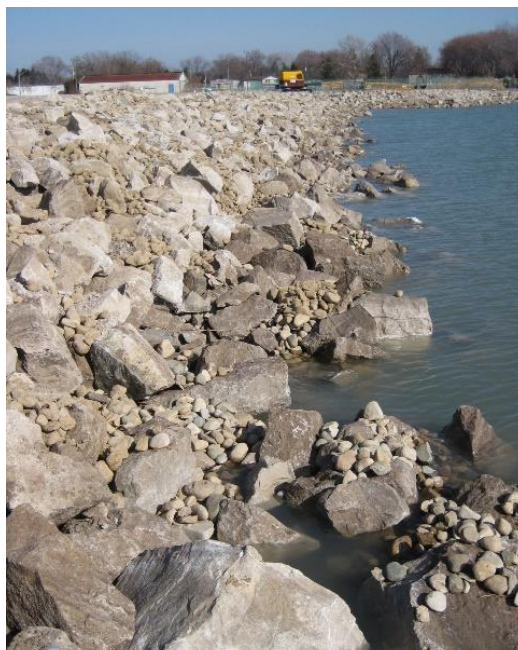


Image 28 - Shoreline softening in LaSalle.

Aquatic Habitat Restoration

In 2012, a fish spawning reef adjacent to the existing one at Fighting Island was constructed. The reef continues to offer suitable habitat for Detroit River fishes and there is now a total of 0.89 hectares (2.2 acres) of reef available for species such as Lake Sturgeon (a species at risk), Walleye, and Lake Whitefish at the northeast tip of Fighting Island.

Further, in 2019, the City of Windsor, ERCA, Environment and Climate Change Canada (ECCC), and The W. Garfield Weston Foundation (via Swim, Drink, Fish) partnered to construct the largest habitat project to date on the Canadian side of the Detroit River. The project is a joint erosion mitigation and fish habitat project at Pêche Island.



Image 29 - Researchers monitor Lake Sturgeon population in the Detroit River, 2017.

Wetland Restoration

The Collavino wetland is 75 acres in the Canard River watershed and has been designated as a Provincially Significant Wetland. With funding support from ECCC, ERCA repaired the existing dyke and installed pumping infrastructure and water level control structures to manipulate water levels on the inside of the dyke. A management plan to remove invasive *Phragmites australis* through water control and herbicides to enhance the wetland habitat for marsh birds and other wildlife has been developed. The management plan is expected to increase native plant presence within the wetlands to improve habitat use.



Image 30 - Collavino Wetland restoration.

Terrestrial Habitat Restoration

Construction of the Rt. Hon. Herb Gray Parkway began in 2011. As one of the largest highway infrastructure undertakings in Ontario, the project addresses long-term community and environmental impacts associated with high volumes of commercial traffic. Exclusively native seed and vegetation were planted within a landscaped corridor to promote connectivity with adjacent tallgrass prairie habitat. The scale of the planting effort was unprecedented for the Ontario Ministry of Transportation (MTO) as it included over 120,000 trees, shrubs, and forbs representing 130 native species and 15 non-standard seed mixes containing 106 different native species of prairie grasses, wildflowers, and sedges.



Image 31 - An ecopassage is installed during road construction of the Herb Gray Parkway.

The Windsor-Detroit Bridge Authority (WDBA), Michigan Department of Transportation (MDOT), MTO, and Bridging North America (BNA) are committed to protecting the environment both on and adjacent to the Gordie Howe International Bridge site. A diverse approach is being implemented to limit any potential adverse effects on the natural environment, cultural resources, and neighbouring residents and businesses. Through daily inspections, several integrated environmental components are regularly assessed to determine the effectiveness of current actions and guide future improvements.

Vegetation in natural areas adjacent the project site, including Black Oak Heritage Park, is protected by exclusionary fencing and/or setbacks. On-site, tree removal is avoided except where needed to allow for the safe construction and management of the project. Where trees of significant sizing require removal, they are tracked and will be replaced as part of the site landscape plan. Vegetation protection and invasive species identification are part of regular site wide inspections to evaluate the continued effectiveness of site environmental mitigation efforts.

Additionally, important environmental areas, including the Broadway Drain, are subject to further enhanced monitoring. To reduce introduction and support the management of invasive plant species on the site, staff are trained on Best Management Practices (BMPs) to avoid transporting invasive species. Staff clothing, equipment and vehicles are regularly checked for seed or plant matter, and cleaned as necessary, before entering and moving around the site. Seed mixes, soil, and other materials coming into the site must also be free of invasive species seeds and plant matter. Where invasive plant species are identified on-site, immediate, seasonally appropriate measures to manage or eradicate the species are taken to prevent further establishment or spread.

Research and Monitoring

Water Quality

Since 2002, ERCA has monitored surface and groundwater quality at numerous stations throughout the region, including the Detroit River watersheds. In total, over 500 water quality improvement projects have been implemented since designation in 2001. Since 2011, 104 water quality improvement and best management projects such as windbreaks and block plantings, buffer strips, rock chutes, septic system upgrades and well caps have been completed.

Remedial Action Plan Research and Monitoring

Since the development of the Canadian Detroit River Remedial Action Plan (RAP), scientists from the University of Windsor's Great Lakes Institute for Environmental Research (GLIER), ECCC, the Canadian Wildlife Service (CWS), Ministry of the Environment, Conservation and Parks (MECP) and the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) continue to study the condition of the Detroit River as part of the DRCC's Area of Concern (AOC) remediation strategy. These ongoing efforts include monitoring and investigating changes in sediment & water quality, wetland condition, fish populations, waterfowl populations, colonial bird populations, wildlife reproductive issues, fish tumours and deformities, and contaminants in fish, benthos, and zooplankton and phytoplankton population studies.



Image 32 – Researchers monitor coastal wetland quality and health in the Detroit River.

Ojibway Shores

The Essex County Field Naturalists' Club (ECFNC), with permission from the Windsor Port Authority (WPA), and in partnership with the DRCC, Citizen Environment Alliance (CEA) and ERCA, were given the opportunity to undertake a biological inventory of the Ojibway Shores property. The Ojibway Shores property is the last remaining natural parcel on the shores of the Detroit River. Data was collected solely on a volunteer basis and findings were verified by local experts.



Image 33 – Bioblitz study team.

Ten evaluation criteria for 'natural heritage significance of the property' were developed by the study team. Ojibway Shores met 9 of 10 criteria considered to be significant natural heritage. The 'satisfied' criteria were as follows: Significant Wetland, Habitat of Threatened and Endangered Species, Significant Woodlands, Significant Wildlife Habitat, Ecological Function, Diversity, Significant Species, Significant Communities, and Condition. Satisfying even one of the first 5 criteria typically qualifies a property with significant natural heritage. Scoring 9 of 10 possible criteria strongly indicates the importance and potential benefit of preserving a property's natural heritage.

Communication and Outreach

In addition to habitat restoration efforts in the river and its watershed, numerous outreach and education events have been implemented to increase awareness about the Detroit River's environmental issues and engage the community in active stewardship, recreation and appreciation of its Natural Heritage. During the last decade, thousands of individuals across the Windsor-Essex community have participated in these opportunities which have included classroom visits, litter cleanups, community naturalization initiatives and other public engagement events.



Image 34 - Look for the DRCC booth at events and gatherings.

Changes to Natural Heritage Values since Designation

Table 2 below outlines changes to natural heritage values since the 2001 to 2011 assessment, following the themes and sub-themes identified in the 2001 CHRS Natural Framework

Changes to Natural Heritage Values since Designation and 2001 to 2011 Assessment			
Themes & Sub-Themes (2001 CHRS Natural Framework)	Natural Heritage Elements Description	Significant Actions, Research or Studies (2011 to 2021)	Changes or Threats to Nomination Value(s)
Hydrology			
Drainage Basins	Atlantic Ocean Basin. Stream Number 1.	No change since designation	None
Seasonal Variation	Period of highest flow is March. Period of lowest flow is May-September.	No change since designation	None
Water Content	Minor sediment load (51-200 mg/l; 5.1 – 10.0 JU). High Total Dissolved solids (> 100 mg/l)	No change since designation	None
River Size	Flow volume at lowest point of nomination - Major Rivers (>800 m ³ /sec). Total Length of River >1000km.	No change since designation	None
Physiography			
Physiographic Regions	St. Lawrence Lowlands	No change since designation	None
Geological Processes	Glacial rebound with typical features such as incised channels, abandoned beaches and deltas	No change since designation	None

Hydrogeology	Pervious (shales) with low porosity (fine-grained clay / silt)	No change since designation	None
Topography	Shallow gradient (<1m/km). Height above sea level 0-400m.	No change since designation	None
River Morphology			
Valley Types	Not described at time of designation.	No change since designation	None
Channel Types	Lake-contained Channel. Level dependent on large lake.	No change since designation	None
Channel Profile	Flatwater level. Insignificant gradient.	No change since designation	None
Fluvial Landforms	Depositional landforms – levees (raised banks enclosing channels within floodplain). Erosional landforms – Gullies.	No change since designation	None
Biotic Environments			
Aquatic Environments	The Detroit River is unique in the CHRS System in that it is a large flowing connecting channel with emergent and submergent wetlands in pockets.	<p>ERCA continues to monitor surface and groundwater quality at numerous stations.</p> <p>A second fish spawning reef adjacent to the existing one at Fighting Island was constructed.</p> <p>Aquatic habitat restoration project in progress at Pêche Island</p> <p>Since the late 1990's, eighteen shoreline improvements have taken place along the Detroit River and one at River Canard Park.</p> <p>Over 10,100 m of shoreline has been softened as a part of the habitat restoration projects since 2000.</p>	Positive improvement.
Terrestrial Ecosystems	Ecozones: Mixed Wood Plains	Area wise, over 3.8 million m ² (3.8 km ²) of trees were planted from 2000-2020.	Positive improvement

		<p>Additionally, over 10,100 m of shoreline has been softened as a part of the habitat restoration projects.</p> <p>Since the late 90s, eleven shoreline improvements have taken place along the Detroit River and one at River Canard Park.</p> <p>Further, in 2013, ERCA completed the ERNHSS as an update to the Essex Region Biodiversity Conservation Strategy (ERCA, 2013).</p>	
Vegetation			
Significant Plant Species	<p>The Detroit River watershed lies fully within the Carolinian Zone; an area which supports a higher diversity of plant and animal species than any other region in Canada. For example, there are more than 2,200 vascular plant species native to the Detroit River watershed alone. This region's extremely high biodiversity not only contains the highest concentration of globally rare species and rare plant communities in Ontario (e.g., globally imperiled Tallgrass communities), but also includes one third of Canada's rare plant and animal species, including some plants exclusive to this area. The Detroit River watershed is also recognized as a globally significant migratory stopover for many waterfowl species.</p>	<p>The Essex County Field Naturalists' Club undertook a biological inventory of the Ojibway Shores property between 2014 and 2016.</p> <p>Construction of the Rt. Hon. Herb Gray Parkway planted native seed and vegetation within a landscaped corridor to promote connectivity with adjacent tallgrass prairie habitat.</p>	Positive improvement

Rare Plant Species	<p>There were 22 plant species listed as Species at Risk (SAR) during the time the CHRS 10 Year Monitoring Report for the Detroit River was written, with either Endangered, Threatened or Special Concern statuses.</p> <p>Of those, 10 were listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and are on the Species at Risk list in Ontario (SARO) through the Species at Risk Act (SARA).</p> <p>A total of 6 were listed as Threatened through COSEWIC and 7 listed as Threatened on SARO. Last, 6 are listed as Special Concern through COSEWIC, and 5 are listed as Special Concern on SARO.</p> <p>There were a total of 9 SAR tree species, 3 tree species listed as Endangered, 2 tree species listed as Threatened, and 1 listed as Special Concern on both COSEWIC and SARO.</p>	<p>As of 2021, a total of 31 plant species are listed as a SAR by COSEWIC and SARO. This includes 16 listed as Endangered by COSEWIC, 15 listed as Endangered on the SARO, 6 listed as Threatened by COSEWIC, 7 listed as Threatened by SARO, 9 listed as Special Concern by COSEWIC and 9 listed as Special Concern by SARO.</p> <p>A full list of plant species at risk and their federal and provincial statuses are included in Appendix III.</p>	<p>Unknown.</p> <p>While there has been an increase in the number of species ranked as endangered within Canada or Ontario, detailed monitoring of rare plant and animal populations is not undertaken. Therefore, the status of rare plants and animals specific to the Detroit River watershed is unknown.</p>
Fauna			
Significant Animal Populations	<p>The Detroit River watershed lies fully within the Carolinian Zone, which supports a higher diversity of plant and animal species than any other region in Canada; the highest concentration of globally rare species and communities in Ontario,</p>	<p>Starting in the 1950s, Bald Eagle numbers in the Great Lakes began to decline because of widespread use of pesticides, like DDT, and habitat loss. Bald Eagles are excellent indicators of environmental health and help us track trends in</p>	<p>Positive improvement.</p>

	<p>including some plants exclusive to this region; one third of Canada's rare plant and animal species; and is globally significant for waterfowl.</p>	<p>bioaccumulative toxins in aquatic ecosystems. By monitoring the health and productivity of Bald Eagles, we can learn more about the potential risks to human health and the overall health of the Detroit River. In the last 20 years, researchers have seen a tremendous recovery in Bald Eagle populations across southern Ontario. The presence of several pairs of successfully nesting Bald Eagles in the corridor is a widely recognized symbol of ecosystem recovery in the Detroit River.</p> <p>The DRCC and ERCA joined U.S. Fish and Wildlife Service researchers on the Detroit River in April 2017 to monitor fish spawning activities at the reef. Evidence of Lake Whitefish and Lake Sturgeon eggs were found on the reefs, indicating that the reefs provide suitable sites for the spawning of these species. Researchers now estimate there are over 6,000 Lake Sturgeon in the Detroit River, and over 30,000 in the corridor from Lake Huron to Lake Erie, making it one of the healthiest populations of sturgeon in the Great Lakes. The project consists of a soft shoreline revetment on the northeast side of Pêche Island and 9 sheltering islands on the north side of Pêche Island.</p>	
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		<p>Once fully constructed, the project will provide approximately 105,000 m² of calm water area that fish can use to spawn and forage, and where aquatic plants can establish. Calm water areas, such as the one created by this project, are rare in the upper Detroit River. Once the calm water area is established, it is expected that it will become an important habitat area for fish and other wildlife. Construction of the project began in October 2020.</p>	
Rare Animal Species	<p>There were 37 animal species listed as Species at Risk (SAR) during the time the CHRS 10 Year Monitoring Report for the Detroit River was written, with either Endangered, Threatened or Special Concern statuses.</p> <p>Mammals: 1 listed as Species of Concern by COSEWIC/SARO.</p> <p>Birds: 9 species listed as Endangered/Threatened/Species of Concern. Of those, 4 listed as endangered by COSWEIC and SARO; 2 Threatened (SARO); 2 Species of Concern (COSEWIC)/3 Species of Concern (SARO).</p> <p>Herptiles: 15 species listed as Endangered/Threatened/Species of Concern. Of those, 6 listed as Endangered</p>	<p>In total, 75 animal species are listed as a Species at Risk by COSEWIC and SARO.</p> <p>This includes 38 listed as Endangered by the Commission on the Status of Endangered Wildlife in Canada (COSEWIC), 33 listed as Endangered by the Species at Risk Act in Ontario (SARO), 17 listed as Threatened by COSEWIC, 13 listed as Threatened by SARO, 21 listed as Special Concern by COSEWIC, 24 listed as Special Concern by SARO.</p> <p>A full list of animal species at risk and their federal and provincial statuses are included in Appendix III.</p>	<p>Unknown.</p> <p>While there has been an increase in the number of species ranked as endangered within Canada or Ontario, detailed monitoring of rare plant and animal populations is not undertaken. Therefore, the status of rare plants and animals specific to the Detroit River watershed is unknown.</p>

	<p>by COSEWIC, 5 Endangered by SARO; 5 Threatened (COSEWIC)/6 Threatened (SARO); 4 Species of Concern (COSEWIC/SARO)</p> <p>Fish: 5 species listed as Endangered/Threatened/Species of Concern. Of those, 1 listed as endangered (COSEWIC/SARO); 2 Threatened (COSEWIC/SARO) and 2 Species of Concern (COSEWIC/SARO)</p> <p>Mussel/Mollusk: 7 species listed as Endangered/Threatened/Species of Concern. Of those, 7 Endangered (COSEWIC); 6 Endangered (SARO) and 1 threatened (SARO).</p>		
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CULTURAL HERITAGE VALUES

Background

The Detroit River and its resources have been used by millions of people for thousands of years. Indigenous Peoples have been stewards of the Detroit River for more than 6,000 years. Prior to European Colonization (17601 to 1867), there were many Indigenous groups inhabiting the Detroit River and its watersheds. An indepth history can be found in the Detroit River Background Report (1998). Today, despite impacts of colonization, Indigenous Peoples and local First Nations communities remain as active stewards in preserving and restoring the Detroit River watershed, their ancestral lands.

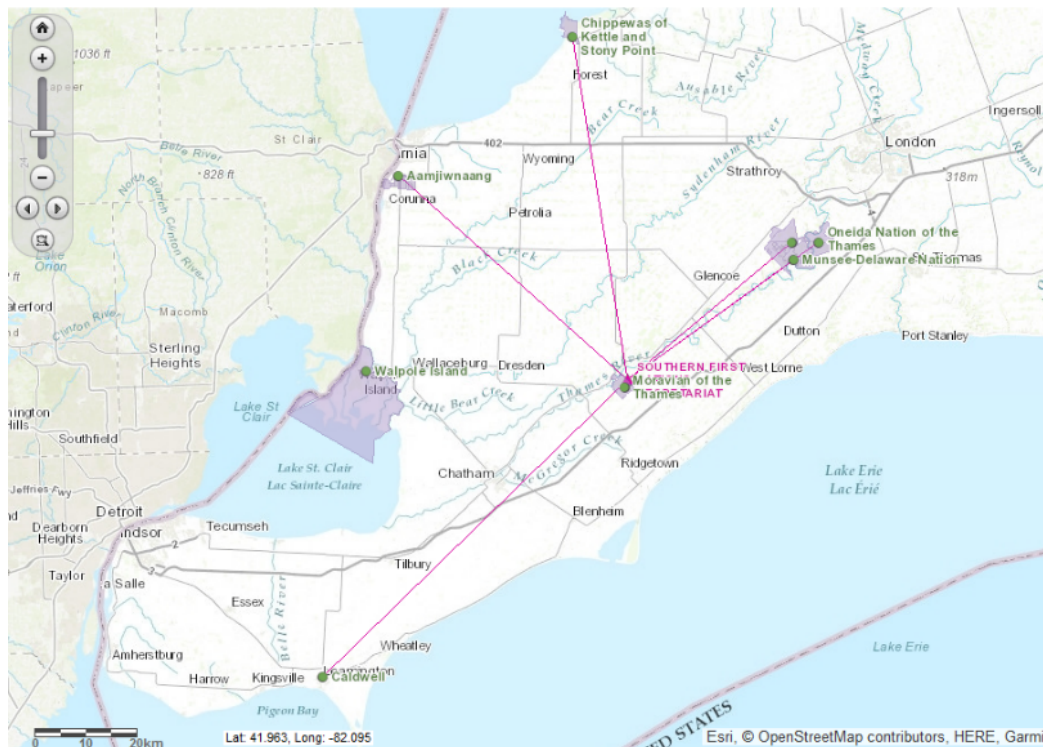


Figure 2. Indigenous Communities and First Nations - Southern ON and Detroit River. Taken from Government of Canada. (2020). First Nation Profiles Interactive Map. Retrieved from: <https://geo.aadnc-aandc.gc.ca/cipn-fnpim/index-eng.html>

The river served as a key settlement site, primary transportation route, and was used for trade purposes and spiritual ceremonies. The river has shaped the history of our bi-national region and, in many ways, has influenced North American industries and the global economy. The Detroit River was and remains:

- An important link to settlements in the mid-west and Great Lakes during the 1700 – 1800s;
- A terminus for the Underground Railroad and the refugee slaves seeking freedom in Canada;

- Strategically located such that Fort Pontchartrain was established in 1701 and the first permanent European settlement in Ontario was established alongside the River in 1748;
- Important to the military as demonstrated by the construction of Fort Malden and the King's Navy Yard in 1796, and in major battles during the War of 1812 and the Rebellion of 1837-38;
- A showcase of engineering marvels such as the Ambassador Bridge, the Windsor-Detroit Tunnel and the Livingston Channel; and
- A location where more than 300 years of European settlement history has been preserved in heritage buildings, waterfront parks, period museums, legends, folk songs, literature, artwork and historical accounts.

Condition of Values Since Designation

Cultural Heritage Values continue to be a cherished and important element of the Detroit River. There were many events, projects, celebrations and programs hosted between 2011 and 2021 highlighting the cultural significance of the Detroit River.

It is important to acknowledge the increased awareness since designation of the Detroit River as a Heritage River, surrounding North American colonization, policies under the Indian Act, the negative effects of residential schools through generations and other Indigenous issues in Canada. In 2008, the federal government established the Truth and Reconciliation Commission of Canada (TRC) to facilitate reconciliation among former residential school students, their families, communities and all Canadians (Government of Canada, 2021a).

This awareness certainly resonates locally as Caldwell First Nation achieved reserve status in 2020 for an 80-hectare property on their traditional territory, in Leamington, Ontario. This land was in their ancestral home, and reserve status was granted following a 230 year pursuit. Their traditional territory stretches from the Detroit River, to Long Point on the north shore of Lake Erie.

In 2018, an Archaeological dig began at an Ambassador Bridge site owned by Walpole Island First Nation. The dig is part of the construction of the new span of the Ambassador Bridge. Both Walpole Island First Nation and the Ambassador Bridge joined together to investigate the archaeological potential of the construction site, as the work is mandated by the Canadian government. AECOM, an archeological firm was hired by Walpole Island First Nation, and the Canadian Transit Company funded the



Image 35 - Archaeological dig in progress near the Ambassador Bridge. Image © cbc.ca

project. Discoveries of the dig include about 30,000 artifacts ranging from a couple hundred years old to nearly 10,000 years old, according to carbon dating.

Respecting the history of Indigenous Peoples and their connection to the Great Lakes, the Detroit River Canadian Cleanup (DRCC) engaged Indigenous communities who are signatories of the McKee Treaty of 1879 and/or have expressed an interest in the restoration efforts of the Detroit River. To guide community engagement, the DRCC developed a Communications Plan (2020-2025) identifying key audiences, tools for engagement, as well as key messaging for beneficial use impairment re-designations and stories about the Detroit River. The DRCC will work with each Indigenous community to discuss how best to engage and share progress on the restoration of remaining impairments and activities. Engagement with the communities will be conducted based on the principles, considerations, and actions included in this strategy.

The Essex Region Conservation Authority (ERCA) began including a Land Acknowledgement at their meetings, events and other types of gatherings in 2018. A Land Acknowledgement is a formal statement that expresses gratitude, appreciation and recognizes and respects Indigenous Peoples as traditional stewards of the land and the enduring relationship between Indigenous Peoples and their traditional territories. Other municipal agencies and organizations moved forward with this effort, as well, as it is recognized as a best practice.

Further, many of the reports that are included in the Canadian Heritage River System designation library for the Detroit River acknowledge Indigenous history in detail. While the previously accepted term 'Aboriginal' is used in the original Nomination Report and Management Plan, for this report, and going forward, this term has been replaced with more appropriate and updated language. In Canada, as Indigenous ways of knowing and awareness increases, so does the understanding of appropriate terminology. While it is difficult to use an all encompassing term, Indigenous Peoples is considered a collective name for the Original Peoples of North America and their descendents. The Canadian Constitution recognizes three groups of Indigenous Peoples including First Nations, Inuit and Métis with distinct peoples, unique histories, languages, cultural practices and spiritual beliefs (Government of Canada, 2021b).

Over the past decade, many celebrations related to the Detroit River's cultural heritage have taken place. In 2011, more than 100 people joined dignitaries from Canada and the United States at the Windsor waterfront to celebrate the 10 year anniversary celebrating the designation of the Detroit River as a Canadian Heritage River.

Particularly in the years leading up to the bi-centennial celebrations of the War of 1812, there was significant emphasis on highlighting the human and cultural heritage associated with the river. For example, on August 25, 2012 The City of Windsor, along with its community partners, presented an all-day family-fun festival to commemorate the War of 1812 and celebrate 200 years of peace. Festivities included a symbolic march, an 1812 festival, poetry readings by Windsor's Poet Laureate, Marty Gervais, and a live concert by the Windsor Symphony Orchestra.

In 2012, a museum exhibit entitled SOS: Saving our Strait – Restoring Our River Together! was on display from June-December 2014 at Windsor's Community Museum. This exhibit depicted the last 60 years of tumultuous environmental history surrounding the Detroit River and the international attention this Heritage River has received in the cleanup effort. An exhibit launch was held in June. A modified, smaller version of the exhibit was on display at the Leddy Library at the University of Windsor during the month of May. A series of four bookmarks highlighting select Detroit River issues, projects and interesting facts were designed and printed to complement the museum exhibit.



Image 36 - The Nazrey African Methodist Episcopal Church, the first black national historic site in Canada. Image © Amherstburg Freedom Museum.

In 2015 and 2020, the North American Black Historical Museum celebrated its 40th and 45th anniversary. The museum began as a historic church, pictured at left, and expanded to include landmark grounds and a museum hall accessible to the public. In 1999, the Nazrey African Methodist Episcopal Church located at the museum site was designated as the first Black national historic site in Canada. The museum also changed its name from the North American Black Historical Museum to the Amherstburg Freedom Museum to emphasize its connection to people seeking freedom.

The Chimczuk Museum is a premier museum destination that houses permanent exhibits on the history of the Windsor area. In 2016, the River and the Land Sustain Us was curated and opened to the public. With 2,705 square feet on the main floor concourse, this space features a Bilingual Permanent Exhibit that tells the history of our City and people. Features include: History of Windsor: pre-history to present; hands-on exhibits; mini-theatre; visitor interactive stations; visitor information stations; core educational programming and public museum tours.

Also in 2016, the Original Peoples Culture and Legacy Gallery was curated and opened to the public. At the north end of the main floor concourse this space reflects the culture, heritage, and contemporary issues of the local First Nations and Métis communities. It also provides an open and flexible gathering space for programming. This exhibit was developed in consultation with Walpole Island Heritage Centre, Caldwell First Nation, Turtle Island-Aboriginal Education Centre (University of Windsor), Can-Am Indian Friendship Centre and other local community organizations. Features include: Creation Stories, Treaties, Residential Schools and 60's Scoop, Language Revitalization, Missing and Murdered Women, Medicine Wheel teachings, and Cultural Expressions.

The City of Windsor had much to celebrate in 2017 – the city marked its milestone 125th birthday, while also commemorating the 150th anniversary of Ontario and Canada. The goal of the Celebrating2017 initiative was to bring together municipal government, businesses, organizations, community groups and the public to celebrate those important heritage milestones for our city, province and country ... all to help make Windsor the place to be in 2017.



Image 37 – The City of Windsor on the Detroit River.

June 11, 2017 was Canadian Rivers Day, and to celebrate, the Canadian Heritage Rivers System released their Canada150 Project: Eau Canada! Local partners representing the Detroit River include Essex Region Conservation Authority (ERCA), Windsor Adventure Inc. and the Detroit River Canadian Cleanup (DRCC). As part of a national effort to recognize and celebrate Canada's Heritage Rivers, as well as the country's 150th birthday, ERCA and a number of local partners hosted free paddling events throughout the Detroit River watershed on Sunday, June 4. Over 200 individuals were out on the Detroit River as a result.

On Saturday, September 23 2017, the DRCC celebrated World Rivers Day by arranging free river crossings to Pêche Island. The island is only accessible by boat so many of the visitors experienced this hidden gem for their first time! With the help of Windsor Essex County Canoe Club, the Great Lakes Institute for Environmental Research at the University of Windsor, and Captain Dan Leavoy and his Fish Tank, 530 people made their way to the City of Windsor's hardest to get to park. While on the island, participants were able to enjoy self-guided hikes, see the historical Hiram Walker summer house ruins, as well as 175 year old native trees and lush wetlands. In addition, guests helped to install a new Bald Eagle platform.

In 2021, the City of Windsor installed 14 plaques that tell the story of the Tecumseh and Brock monument, archaeological investigations carried out in the Sandwich roundabout, the Detroit River and other culturally significant heritage stories of the region.


Changes to Cultural Heritage Values since Designation

Table 2 below outlines changes to cultural heritage values since the 2001 to 2011 assessment, following the themes and sub-themes identified in the 2001 CHRS Natural Framework.

Table 2. Changes to Cultural Heritage Values since Designation and 2001 to 2011 Assessment

Changes to Natural Heritage Values since Designation and 2001 to 2011 Assessment			
CHRS Cultural Framework (2000)	Cultural Heritage Values	Significant Actions, Research or Studies (2011 to 2021)	Changes or Threats to Nomination Value(s)
Resource Harvesting			
Fishing	Indigenous fishing, domestic consumption of fish, commercial fishing	In 2015, a partnership between the Michigan Department of Natural Resources, the U.S. Geological Survey and the Ontario Ministry of Natural Resources and Forestry was developed in order to conduct a full creel survey of the Detroit River. Results show anglers put in over 600,000 hours on the river with the majority of recreational fisheries catch and effort at 54% and occurred during April and May in 2015.	None
Shoreline Resource Harvesting	Trapping of beaver, trapping of other edible or fur-bearing aquatic animals, hunting of waterfowl, quarrying stone	None	None
Extraction of Water	Small scale domestic use, municipal water supplies, agricultural uses, industrial extraction for factories and mines	None	None
Water Transport			

Commercial Transportation	Navigable channel itself, human or wind powered commercial freight and passenger transport, powered commercial freight and passenger transport, navigational improvements, cargoes.	Continuing since designation. Dossin Museum of the Great Lakes provides a River Cam so anyone can follow river traffic.	None
Transportation Services	Places of construction, repair and storage of craft, facilities for loading, unloading and storing cargo and passengers	No passenger ferries have been implemented to transport the public between Canada and the United States. Bois Blanc Canada offers a private car ferry that runs every 20 mins, 24 hours, every day of the year for current residents of the Boblo Island island.	None
Exploration & Surveying	Not nominated on this value.	None	None
Riparian Settlement			
Siting of Dwellings	Dwellings, farmsteads originally accessible only by river, dwellings and lots sited in respect of floods, water access; shoreline seasonal settlements, significant riparian residences	None	None
River-based communities	Archeological evidence of shoreline Aboriginal settlements; patterns of settlement affected by surveys; roads/railways whose structure is dictated by rivers	In 2018, an Archaeological dig began at an Ambassador Bridge site owned by Walpole Island First Nation. The dig is part of the construction of the new span of the Ambassador Bridge. Both Walpole Island First Nation and the Ambassador Bridge joined together to investigate the archaeological potential of the construction site, as the work is mandated by the Canadian government. AECOM, an archeological firm was hired by Walpole Island First Nation, and the Canadian Transit Company	Positive improvement

		funded the project. Discoveries of the dig include about 30,000 artifacts ranging from a couple hundred years old to nearly 10,000 years old, according to carbon dating.	
River-influenced transportation	Steel road bridges; ferries and associated docks, cables; tunnels/fords/causeways	Ambassador Bridge, Detroit-Windsor Tunnel and the ongoing construction of the Gordie Howe International Bridge.	None
Culture and Recreation			
Spiritual Associations	Ritual or ceremonial structures; sites of recurring spiritual or ritual activity; burial grounds	<p>The Detroit river was used as a baptismal site by Bishop Clarence Leslie (C.L.) Morton Senior a preacher who established Mt. Zion Church and was the leader of 6 churches in the Windsor/Essex/Detroit Region.</p>  <p>Image 38 - Amherstburg Heritage Homecoming Crossing Reenactment © Amherstburg Freedom Museum.</p> <p>Mount Zion Church hosted the annual River Baptismal Service bringing thousands to the riverfront in the 1940s and 1950s. Baptisms were publicly hosted event. The full immersion of the individual in the river symbolized the washing away of the old, and the beginning of a new life (Windsor Communities, 2022).</p>	None
Cultural Expression	Historical river-based literature; paintings of specific rivers or	Some examples of historical based Detroit River literature include:	Positive Improvement

	<p>people using rivers; river folklore; architectural responses to river locations; river-based cultural landscapes</p>	<ul style="list-style-type: none"> • <i>A North-Side View of Slavery. The Refugee: or the Narratives of Fugitive Slaves in Canada. Related by Themselves, with an Account of the History and Condition of the Colored Population of Upper Canada:</i> Electronic Edition. Written by Drew Benjamin (1812-1903). Can be accessed via Docsouth: <p>The Art Gallery of Windsor (AGW) is a non-profit public art gallery focused on presenting the visual arts of Canada, and has exhibited pieces that highlight local human and cultural heritage relating to the Detroit River. Previously, in 2017, the Art Galley of Windsor hosted Verner's Sandwich which included several historical paintings of the Detroit River area.</p> <p>Also, in 2020-2021 the Art Gallery of Windsor hosted a show called Detroit, We Love You, where artists were featured who worked in the Windsor-Detroit area.</p> <p>Their collection is available to search online.</p> <p>Museum Windsor consists of the Francois Baby House and the Chimczuk Museum, and shares the building with the Art Gallery of Windsor. There are historical based Detroit River literature, historical accounts, songs and other forms of cultural expression that are available to research in their holdings by appointment.</p> <p>Additional primary sources including the <i>Voice of the Fugitive</i> newspaper (published in Sandwich) include articles about Freedom Seekers coming to Windsor via the Underground Railroad and the Detroit River. See example from July 1, 1852 (column 4).</p>	
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		<p>Some examples of Detroit River area literature, historical accounts and songs include:</p> <ul style="list-style-type: none"> • Indigenous oral traditions of song and stories • A variety of French folk tales and songs • Published accounts of early French and Indigenous history • Literature and published accounts of the British Period (1760 to Confederation) • Underground Railroad and accounts of enslaved persons seeking refuge in Canada • Twentieth century accounts of border history <p>More details from the list above can be found in the Detroit River A Canadian Heritage River Background Report, 1998.</p> <p>Some examples of Detroit River folklore include:</p> <ul style="list-style-type: none"> • The Curse of Pêche Island (From Les Fêtes du Tricentennial de la Région, pp. 19-21) • La Chasse Galerie (From Detroit River A Canadian Heritage River Background Report, 1998). <p>There are a number of music videos/songs that have been published on YouTube between 2011 and 2021 that include the Detroit River by both Canadian and American artists. For example, in 2013/14: A children's song about the Detroit River was written and recorded by professional singer/song-writer Ashley Moffat.</p>	
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Early Recreation	Watersport facilities or clubs	There are many clubs, groups, businesses, services, publically accessible places and more within the Detroit River watershed that focus on water based recreation such as canoe, kayak, stand up paddling, exploring Pêche Island. Please visit the Detroit River Cultural, Recreational and Natural Heritage Map.	Positive Improvement
Jurisdictional Uses			
Conflict & Military Associations	Indigenous conflict sites, European armed conflict afloat, invasion routes and associated battlefields, river-side fortifications	The Essex Region Conservation Authority (ERCA) began including a Land Acknowledgement at meetings, events and other types of gatherings in 2018. Other municipal agencies and organizations also adopted this best practice for meetings and other occasions.	Positive Improvement

RECREATIONAL HERITAGE VALUES

Background

For hundreds of years, the Detroit River has been used for boating, fishing and hunting, and nature viewing and appreciation. On the Canadian side of the river, one of the most popular recreational draws is an extensive park and trail system that follows the shoreline and connects multiple communities in Windsor, and extends beyond to other municipalities including Tecumseh, LaSalle and Amherstburg. These spaces bring hundreds of thousands of residents and tourists to discover and enjoy its beauty and value.

The Detroit River boasts the largest number of recreational watercraft use per capita in North America, and more than 93 public and private marinas on both sides of the river. Further, the extensive riverfront park system on both sides of the river offering public access for world-class



Image 39 - The Detroit River is a playground for all types of watercraft.



Image 40 - Riverfront spaces allow residents to enjoy the Detroit River's benefits.

fishing, boating, views of lush natural features, passing ships and urban skylines, as well as venues for numerous annual festivals and events. These publicly accessible green spaces and waterfront access provide outstanding opportunities for residents and visitors to enjoy boat tours, sightseeing and participating in bird watching, angling and hunting. In addition, riverfront spaces in Windsor, LaSalle and Amherstburg provide opportunities for numerous festivals and events held on both the American and Canadian side of the Detroit River annually.

Condition of Values since Designation

The Detroit River continues to be an outstanding destination for recreation. Since designation, many parks have been upgraded and enhanced and new parklands added to provide residents and visitors with ample opportunities to appreciate the Detroit River. The Detroit River also remains a high quality, heavily used recreational resource for all types of boating. There is certainly a growth of businesses locally that promote water based sports such as paddling, rowing, sailing, to increase opportunities for people to experience the Detroit River. In particular, businesses that offer rental equipment are popular and help reduce barriers for people to participate in water sports who otherwise could not own their own equipment.



Image 41 - The Ford Fireworks are held on the Detroit River and attract an estimated 1 million people annually.

An observational survey of Detroit River aesthetics continued into 2012. Visual observations were taken every 2 weeks at the sites along the river. The data will be used, along with data collected via a public questionnaire in 2010, to review the status of Degradation of Aesthetics (BUI #11). The report was completed in 2013, and this beneficial use impairment was re-designated as no longer impaired in 2014.

In 2015, a partnership between the Michigan Department of Natural Resources, the U.S. Geological Survey and the Ontario Ministry of Natural Resources and Forestry was developed in order to conduct a full creel survey of the Detroit River. This survey provided information to the DRCC to gather information about the number of hours they fished, what species they're targeting, the size of the fish they caught, and whether they released or harvested the fish. This creel provides a snapshot of the recreational fishery measuring the effort, catch, and harvest of fish from the Detroit River.



Image 42 - Fishing along the Detroit River during the Detroit River Canadian Cleanup Family Fishing Day, 2017.

Anglers put in over 600,000 hours on the river with the majority of recreational fisheries "catch and release" effort at 54% and occurred during April and May in 2015. Anglers caught and harvested over 500,000 White Bass (more than any other species). Walleye is the preferred fish sought out of the Detroit River with 73% targeted and 87% harvested (around 150,000 fish). There were 192,000 Yellow Perch caught, mostly in September (68% at a rate of 4.13 perch per angler hour). Over 100,000 Smallmouth Bass were caught in 2015. Either in May (22%) during the Michigan catch and release season or in September (30%). Of all the Smallmouth Bass caught, 97% were released. Anglers in the Detroit River caught over 4,000 Muskellunge. Most muskies were caught in the spring (April to June); however, it does appear that catches do occur throughout the year. Similar to the Lake St Clair Muskie fishery, 99-100% of all Muskie caught were released.

New fishing docks and observation platforms have been constructed, and soft-shore engineering projects have enhanced the aesthetics of the river, which also support fish habitat and provide access for fishing. These projects include Canard Park in LaSalle and the HMCS Hunter location at Mill Street in Windsor.

In addition, the Herb Gray Parkway Trail was officially open in 2016 and offers 17 kilometres of multi-use paved trails, set within 120 hectares of green space within two highway extensions and across 11 tunnel tops. The trail network features a continuous multi-use lit pathway, with bridges and tunnels that allow pedestrians and cyclists to travel the length of the parkway without encountering vehicles. Rest areas and interpretive signs are also located where there are features of interest. Signage along the trails includes information about the parkway, regional cultural heritage, First Nation culture and history, and the special natural areas such as Tallgrass Prairie. As a result of a significant Canadian-US partnership, a bi-national Greenways Vision map was created to encourage people to grab their bikes and explore both sides of the Detroit River. This map is intended to connect emerging international greenways, trails, and bike lanes, establishing safe and convenient routes for pedestrians and bicyclists.

Changes to Recreational Heritage Values since Designation

Table 3 below outlines changes to recreational heritage values since the 2001 to 2011 assessment, following the themes and sub-themes identified in the 2001 CHRS Natural Framework.

Table 3. Changes to Recreational Heritage Values since Designation and 2001 to 2011 Assessment

Changes to Recreational Heritage Values since Designation and 2001 to 2011 Assessment			
Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies (2011 to 2021)	Changes or Threats to Nomination Value(s)
Boating			
High Speed Boating	The Detroit River remains a high quality, heavily used recreational resource for all types of boating.	Watersports have increased in participation and popularity and include canoe, kayaking, stand up paddle, scuba, water-ski, rowing, sailing, recreational boating and more. The increase in rental based businesses provide opportunities for people to experience recreating on the Detroit River and in the watersheds who otherwise might not be able to without personal equipment.	Positive improvement
Day Paddling & Rowing			
Sailing			
Commercial Boat Tours	Boat tours continue to be offered on both sides of the river.	Public docks and shoreline terminal continue to provide Great Lakes cruise ships, dinner cruisers, tour boats, tall ships and other vessels of	Positive Improvement

		interests access to the Detroit River and transportation between Windsor and Detroit.	
Angling			
Day Angling	The Detroit River continues to be heavily used for day/weekend angling opportunities.	<p>The Detroit River continues to be used for day and weekend angling opportunities, whether they are casual, angling for consumption or competition based.</p> <p>There are many derbies, tournaments, shows, and learn to fish events offered along the Detroit River. These events include the Detroit River Walleye Classic, where anglers launch from the Town of LaSalle's marina and includes a derby for kids. The Windsor Sportsmen's Club hosts an annual kids' fishing derby in May at Reaume and Dieppe Parks. Also in June, the Italian Canadian HandiCapable Association's Pat Pagano Annual Fishing Derby at Assumption Park. The Windsor Police Association also hosts the Cops and Kids Fishing Derby in June at Dieppe Park. The Riverside Optimist Club Kids Fishing Derby is hosted in May or June at Reaume Park. Tourism Windsor Essex Pelee Island (TWEPI) also hosts the Get Hooked Fishing Tournament which is a socially distanced catch and release event that runs for several weeks.</p>	Positive Improvement
Weekend Angling			

		<p>Last, the Detroit River Canadian Cleanup (DRCC) hosts the Learn to Fish event for families on the licence free fishing weekend every July. For more information about fishing in Windsor-Essex, visit TWEPI's Gone Fishin' page.</p>	
Angling Vacation	Not described at time of designation	<p>Tourism Windsor Essex Pelee Island (TWEPI) provide numerous resources on their website to connect visitors and local residents to angling opportunities on the Detroit River whether they are casual, consumption or competition focused. Many local residents enjoy the convenience of angling opportunities the Detroit River offers. However, healthy muskie, yellow perch and silver bass fisheries are popular for anglers to visit Windsor-Essex and fish the Detroit River.</p>	Positive improvement
Ice Fishing	Not described at time of designation		None
Specific Fish Species	<p>Of the 117 species of fish in the Great Lakes, 75 are found in the Detroit River.</p> <p>The River is known internationally for its Muskellunge, Walleye, White Bass and Yellow Perch in addition to other sport fisheries.</p>	<p>In 2019/20 progress was made towards constructing the largest habitat project to date on the Canadian side of the Detroit River. The project consists of a soft shoreline revetment on the northeast side of Pêche Island and 9 sheltering islands on the north side of Pêche Island. Once fully constructed, the project will provide approximately 105,000 m² of calm water area that fish can use to spawn and forage, and where aquatic plants can establish. Calm water</p>	Positive Improvement

		areas, such as the one created by this project, are rare in the upper Detroit River. Once the calm water area is established, it is expected that it will become an important habitat area for fish and other wildlife. This project is expected to create critical habitat for the Northern Madtom, an Endangered species.	
Water Contact			
Swimming	Swimming and swimming beaches, continue to be available.	No public swimming is available along the Canadian side of the Detroit River.	None
Water Skiing	Not described at time of designation.		None
Snorkel/Scuba	Diving continues to be popular in the Detroit River.	The Windsor Dive Club and the Benthic Scuba & Snorkel Centre provide learning opportunities and diving trips/excursions locally.	Positive Improvement
Water Associated			
Trail Use	Regional and Municipal Trails have increased and enhanced to provide more opportunities for river-based trail use.	Municipal and regional trails have increased and provide more opportunities for recreational river-based trail use. These include: Herb Gray Parkway, Ganatchio, Greenway , Windsor Essex Parkway and the Windsor Detroit River riverfront trails all continue to be publically accessible trails.	Positive Improvement

Camping		Camping continues to be provided for in the Detroit River watersheds.	None
Hunting		Waterfowl, deer, turkey and pheasant hunting and hunting clubs throughout Detroit River watersheds.	None
Natural Heritage Appreciation			
Wildlife		<p>Organizations such as the Essex County Field Naturalists' Club and the Essex Region Conservation Authority provide opportunities for nature appreciation by hosting hikes and expert naturalist talks relevant to the local flora and fauna. Further, in September, the annual Hawk Festival is hosted in celebration of fall bird migration by nature based partners.</p> <p>The DRCC hosts the Learn to Fish event for families on the licence free fishing weekend every July. The lower Detroit River is recognized as a globally significant Important Bird Area (IBA) by Birds Canada.</p>	Positive Improvement
Vegetation		Ongoing efforts made by multiple organizations, private donations and levels of government contribute towards the securement of additional natural areas and trail systems across the Detroit River watershed.	Positive Improvement

Vistas/Scenic Quality		On going efforts to restore habitat and maintain publically accessbile green spaces continues in the Detroit River watershed by many partners. Municipalities are focused on riverfront development that maximizes beautification, parking, accessibility and promenades for residents to experience the Detroit River.	Positive Improvement.
Geological Features/Water Features		Detroit River International Wildlife Refuge established in 2002 as the only international wildlife refuge in North America, and includes nearly 6,000 acres of natural heritage protection along 48 miles of Detroit River and Western Lake Erie shorelines. In 2012, the Western Lake Erie Watersheds Priority Natural Area became a defined area for protection that includes land in western and southern Essex County. It stretches from Tecumseh, Windsor and LaSalle east to Leamington and includes areas that drain into the Detroit River and Lake Erie.	None
Human Heritage Appreciation			
Historic Sites		Many historic sites, including Fort Malden National Historic Site, Chimczuk Museum, Amherstburg Freedom Museum, the Park House Museum, John R. Park Homestead Conservation Areas and others continue to provide ongoing events and activities to commemorate the	None

		cultural heritage of the Detroit River and surrounding communities. In fact, there are approximately 40 local heritage groups serving as members of the Southwestern Ontario Heritage Council.	
Cultural Landscapes		<p>The Riverfront Festival Plaza is an ideal location for major festivals and has been the preferred site to many of the City of Windsor's most popular outdoor festivals and events, ranging from elegant epicurean festivals to family busker entertainment and live concerts.</p> <p>Further, Windsor's Great Canadian Flag is flown proudly at the riverfront. It is 1,800ft² and was built in 2017 to celebrate Canada's 150th anniversary of Confederation and the City of Windsor's 125th birthday.</p> <p>Dieppe Gardens, Charles J. Clark Square, Riverdance Park and King's Navy YardPark are additional popular location for events along the riverfront.</p>	None
Sporting Events/Activities		The Detroit River continues to be a picturesque setting across municipalities for various sporting events like The Colour Run, various 5K charitable runs, and Windsor's Firefest, which has	None

		traditionally included firefighters from across the Province of Ontario.	
Cultural Events/Activities		<p>As the Town of LaSalle, City of Windsor and the Town of Amherstburg have included cultural heritage values in their municipal policies, Official Plans and zoning by-laws, events such as Heritage Week continue to be hosted annually.</p> <p>Museums continue to host human/cultural heritage focused events and exhibitions that reflect the central role of the Detroit River in local history.</p> <p>In particular, the Amherstburg Freedom Museum celebrates Black History Month annually and highlights the cultural significance of the Detroit River and the Underground Railroad by hosting learning opportunities for the public.</p>	Positive Improvement

INTEGRITY GUIDELINES SINCE DESIGNATION

Table 4 below identifies cultural, natural and recreational integrity values that reflect the Canadian Heritage River System (CHRS) principles, procedures and operational guidelines.

Table 4. Integrity Guidelines since Designation

Integrity Guidelines since Designation		
CHRS Principles, Procedures and Operational Guidelines	Integrity Values	Changes or Threats to Integrity Value(s) since Nomination
Natural Integrity Guidelines		
The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the natural processes, features or other phenomena which give the river its outstanding natural value.	The river and its watershed are of sufficient size and composition to demonstrate the key aspects of features and processes which give the Detroit River its outstanding values. The river is 51 kilometres in length, and its width varies from six-tenths of a kilometre to five kilometres.	None
The nominated area contains those ecosystem components required for the continuity of the species, features or objects.	The river contains ecosystem components necessary for the sustainability of its valued features.	None
There are no human-made impoundments within the nominated area.	The Detroit River does not contain any man-made impoundments. Its regime has remained virtually unchanged since the first settlements.	None
All key elements and ecosystem components are unaffected by impoundments located outside the nominated area.	The entire Detroit River and its major tributaries were nominated as a CHR, and there are no impoundments that affect the designated area.	None
Natural values for which the river is nominated have not been compromised.	The Detroit River was not nominated based on its natural heritage values. However, since designation, hundreds of clean up and restoration projects have taken place within the Detroit River and its watersheds, and measurable improvements to its	Positive Improvement

	natural heritage have been demonstrated.	
The water of the nominated area of the river is uncontaminated to the extent that its natural aquatic ecosystem is intact.	The Detroit River is a working river and the busiest international crossing in North America. The communities along its banks have demonstrated significant commitment to improving its natural ecosystem through hundreds of projects, including major efforts at the Lou Romano Water Reclamation Plan, the Central Riverfront Retention Treatment Basin, and the Amherstburg Wastewater Plant. The Detroit River Canadian Cleanup is dedicated to the River's restoration and has made significant strides towards the improvements of its natural heritage and ecosystem health, as evidenced by the resurgence of Lake Sturgeon and Bald Eagles.	Positive Improvement
The natural aesthetic value of the river is not compromised by human developments.	Additional parkland, softened shoreline and restoration projects have occurred since the time of designation, improving opportunities for people to connect with and appreciate the significant natural beauty of the Detroit River.	Positive Improvement
Cultural Integrity Guidelines		
The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the features, activities or other phenomena which give the river its outstanding cultural value.	Bi-national communication amongst heritage groups have continued to work collaboratively on supporting cultural values of the Detroit River.	None
The visual appearance of the nominated area of river enables uninterrupted appreciation of at least one of the periods of the river's historical importance.	The Detroit River's regime has remained basically unchanged since the area was discovered by European explores more than 300 years ago. Today, it flows past the same lands and islands, without impoundments, as it	None

	has for centuries. Its shorelines have changed in many locations through erosion protection projects and urban development, but pockets of undeveloped land still exist, appearing much as they did in the past.	
The key artifacts and sites comprising the cultural values for which the river is nominated are unimpaired by impoundments and human land uses.	There are rich examples of <i>in situ</i> historical artifacts along the Detroit River. Archaeological sites, Fort Malden and several heritage buildings represent pre-settlement, as well as the 18 th and 19 th centuries.	None
The water quality of the nominated area does not detract from the visual character of the cultural experience provided by its cultural values.	The “Degradation of Aesthetics” is one of the 14 variables used to measure the Detroit River’s ecosystem health. In summer 2011, the DRCC conducted a visual survey of aesthetics at 11 sampling location along the entire length of the Detroit River. In 2014, this Beneficial Use Impairment (BUI) was re-designated as ‘not impaired’.	Positive Improvement

MANAGEMENT PLAN RECOMMENDATIONS AND CURRENT STATUS

As part of the *Management Strategy, 2001*, several river management actions have been developed, which directly reflect Canadian Heritage River Systems (CHRS) strategic directions. They also provide a framework for the Detroit River community to carry out conservation, enhancement, interpretation and appreciation efforts within the watershed. The management strategy was created as a 'living document', one that continuously evolves and responds to the changing needs of the Detroit River watershed community. Table 5 below identifies the recommendations listed in the management plan, their status and relevant information related to each action.

Table 5. Management Plan Recommendations and Current Status

Management Plan Recommendations and Current Status		
Management Plan Recommendation	Degree of Achievement (initiated, on-going, addressed, partial, complete)	Actions/Notes
Overarching Actions		
Establish a Detroit River Council.	Ongoing	<p>The Detroit River Canadian Cleanup (DRCC) initiative works together collaboratively to address the natural heritage values of the Detroit River. The DRCC Public Advisory Council (PAC) was struck in 2004, and is an independent branch of the DRCC with representation from the public, volunteers and environmental groups locally.</p> <p>As well, the Western Lake Erie Watersheds Priority Natural Area, which includes the Detroit River, includes representation from all levels of government and public.</p>

Hold Community Workshops to develop local and international partnerships.	Ongoing	<p>The DRCC continues to work towards binational partnership and collaboration on restoring the Detroit River through international partnerships including the Friends of the Detroit River and American organizations represented through the Detroit River Coalition.</p> <p>The Detroit River Project is a stakeholder group comprised of members from the United States and Canada with its end goal in to have the Detroit River added to the UNESCO World Heritage Site list.</p> <p>The Gordie Howe International Bridge project identifies community benefit opportunities that can advance economic, social or environmental conditions for local communities. In developing the Community Benefits Plan, it was key that the initiatives selected for implementation would provide positive outcomes for the Windsor-Detroit region and specifically focus on enhancing the Sandwich and Delray communities, the neighbourhoods closest to the project area which spans the Detroit River. Community benefits initiatives are delivered by the project team, a collaboration between Windsor-Detroit Bridge Authority, Bridging North America and the State of Michigan.</p>
Establish a Detroit River newsletter and maintain a website.	Ongoing	<p>The DRCC publishes a monthly newsletter called The Current with updates regarding progress along the Detroit River. This partnership also publishes a Detroit River website that identifies outreach projects, local news stories, monitoring and research projects, habitat restoration work, annual reports, meeting records of various working groups and other information relevant to the Remedial Action Plan. This website is www.detroitriver.ca. In addition, the Detroit Heritage River designation is prominently featured on ERCA's website.</p>
Install signage recognizing Canadian and American Heritage River designations.	Completed	<p>The ten interpretive signs that are strategically placed along the Detroit River Heritage Parkway identify the Detroit River as the only river in North America with both Canadian and American Heritage River designations.</p>
Establish a Detroit River Day.	Ongoing	<p>The DRCC hosts an annual visit to Pêche Island, when weather permits. This event highlights Pêche Island as one of the Detroit River's beautiful natural islands, and utilizes the opportunity to showcase projects, programs and successes along the river. In 2011, they also introduced the first Detroit River Evening, which is held annually celebrating partnership efforts and progress updates within the Remedial Action Plan.</p>

Develop a Registry of Actions	Ongoing	<p>A Registry of Actions was published by Essex Region Conservation in 2001 which identifies and highlights projects and actions undertaken by the River community.</p> <p>As part of the Stage 2 Detroit River Remedial Action Plan Stage 2 Report (2010), a list of projects that have been completed by 2010 was included that fall under habitat, pollution prevention, monitoring and research and outreach categories.</p> <p>The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an Area of Concern.</p> <p>In 2018, Detroit DRCC published an interactive Story Map highlighting thirty years of projects to restore the Detroit River.</p> <p>In 2019, in collaboration with Parks Canada, the Story Map highlighting the values for which the Detroit River was designated as a Canadian Heritage River was launched</p> <p>In 2020 the DRCC began transferring all project inventories listed in the DRDIS into a more modern database that will exist as a full inventory of all cleanup efforts.</p>
Develop Detroit River heritage value-based educational programs	Ongoing	<p>Various educational programs targetting K to 12 and post-secondary students have been developed and delivered by both ERCA and DRCC. Some of these efforts include delivering an in-field and in-class benthic education program, providing a detailed presentation to students studying in the Great Lakes Water Quality Agreement course at the University of Windsor about the Detroit River Area of Concern program and more.</p>
Cultural Heritage Actions		
Identify historical resources as a first step in developing a cultural heritage conservation strategy	Ongoing	<p>Historical resources of the Detroit River are identified within its Nomination Report and also highlighted within the story map. The Southwestern Ontario Heritage Council is an active group of over 40 local heritage organizations that meet regularly for networking and knowledge-sharing; further, the group works collectively to preserve and promote local cultural heritage through events, activities, exhibitions and more.</p>

<p>Ensure cultural heritage values are reflected in municipal policies, Official Plans and zoning by-laws</p>	<p>Ongoing</p>	<p><u>Town of LaSalle</u></p> <p>The Town of LaSalle’s commitment to cultural heritage values are reflected in Section 3.2.3 of the Official Plan (OP), “Healthy, Vibrant and Caring” LivablCe Neighbourhood Healthy Communities, Turning Vision into Reality. Adopted by Council and the County of Essex in 2018.</p> <p><u>Town of Amhersturg</u></p> <p>The policy of the Town of Amherstburg’s Official Plan encourages the restoration, protection, conservation, and maintenance of the Town’s archaeological and heritage resources, which include buildings and structures of historical and/or architectural value, as well as the natural heritage landscape. All new development or redevelopment permitted by the policies and designations of this Plan shall have regard for the conservation of heritage resources.</p> <p>It shall be the policy of the Town to use all relevant legislation and programs whenever possible to encourage the preservation and enhancement of heritage resources and to develop a greater awareness of the value of heritage conservation in the community. When appropriate and necessary, the Town will use the provisions of the Ontario Heritage Act to conserve, protect and enhance the Town’s heritage (Town of Amherstburg, 2021).</p> <p><u>City of Windsor</u></p> <p>The City of Windsor’s Official Plan sets the goals for heritage planning, which are to identify, recognize, protect, enhance and properly manage the City's heritage resources. Heritage resources include buildings, structures, archaeological and historic sites, landscapes and landmarks, either individually or in groups, which are considered to be of significant architectural and/or historic value.</p> <p>Pursuant to the Ontario Heritage Act, the City of Windsor has the authority to grant legal recognition to properties of historic and/or architectural importance by means of a heritage designation. This designation helps to ensure the protection of these properties so that future generations are able to recognize and appreciate them as symbols of our history and our civic pride.</p> <p>The Development and Heritage Standing Committee is responsible for providing a recommendation to Council on the identification, recognition, protection, enhancement and proper management of heritage resources in the city. This includes recommending properties suitable for designation. Individual citizens may recommend designation as well.</p>
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		Heritage conservation is incorporated into the planning process in Windsor by utilizing site plan control, zoning amendment, secondary plan, and other approval processes to ensure that any proposed development does not negatively impact heritage resources. An archeological assessment may be required when development will affect known or potential archeological resources (City of Windsor, 2021).
Ensure cultural heritage values are integrated into recreation, transportation and other plans	Ongoing	Heritage Planning Committees exist in the City of Windsor and Town of Amherstburg to ensure cultural heritage values are integrated across planning channels.
Develop local and international tours and other activities such as websties	Ongoing	<p>A new interactive mapping tool that tells the cleanup story of the Detroit River was released in 2018.</p> <p>The Heritage River story maps project was complete and includes the Detroit River.</p> <p>In 2021, in celebrating the Detroit River's 20th Anniversary as a Canadian Heritage River, several tourism itineraries profiling the river's heritage values were developed in partnership with Tourism Windsor-Essex Pelee Island.</p>
Recreation Actions		
Plan and develop a Riverfront 'parkway'	Complete	Signs identifying the Detroit Canadian Heritage River Parkway installed in the early 2000s continue to guide participants along the scenic driving route, 10 interpretive signs are located along parkway stops to provide enhanced interpretation of the cultural, natural and recreational values of the Detroit River.
Develop and implement the Essex Region Eco-tourism Strategy with a Detroit River component	Ongoing	In partnership with Tourism Windsor-Essex Pelee Island and a variety of tourism partners, nature based tourism opportunity such as paddling, birding, cycling and others continue to flourish within the Detroit River and its watersheds.

Develop joint international recreational activities and events	Ongoing	The Detroit River Coalition was formed in 2020 and is a binational environmental resource hub leveraging collective partnerships to reduce litter pollution in the Detroit River through education, coordination, and clean-up services, as well as celebrate its natural and cultural significance for communities throughout the Great Lakes Region. For the 50 th anniversary of Earth Day, DRC members coordinated a binational cleanup event that was cancelled due to the Covid-19 pandemic. Efforts were switched to online and virtual engagement in 2020 and 2021. Binational events will be coordinated through the Coalition in the future when it is safe to do so.
Natural Heritage/Environmental Cleanup Actions		
Expand implementation of water quality remediation work plans	Ongoing	The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an Area of Concern.
Continue habitat restoration projects	Ongoing	<p>A second fish spawning reef adjacent to the existing one at Fighting Island was constructed. Further, aquatic habitat restoration project in progress at Pêche Island. Since the late 90's, eighteen shoreline improvements have taken place along the Detroit River and one at River Canard Park.</p> <p>Over 10,100 m of shoreline has been softened as a part of the habitat restoration projects since 2000.</p> <p>Area wise, over 3.8 million m² (3.8 km²) of trees were planted from 2000-2020.</p> <p>Further, in 2013, ERCA completed the Essex Region Natural Heritage System Strategy (ERNHSS), as an update to the Essex Region Biodiversity Conservation Strategy (ERCA, 2013).</p>
Coordinate and expand watershed – wide water quality monitoring	Ongoing	<p>The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an Area of Concern.</p> <p>ERCA continues to monitor surface and groundwater quality at numerous stations through provincial water quality monitoring programs, as well as an expanded sampling and monitoring program managed by ERCA.</p>

Recognize and support environmental cleanup efforts undertaken by industrial interests	Ongoing	The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an Area of Concern.
Protect natural features through municipal planning documents and other policies	Ongoing	In 2013, ERCA completed the ERNHSS, as an update to the 2002 Essex Region Biodiversity Conservation Strategy (ERCA, 2013). This study was incorporated into the 2014 County of Essex Official Plan (OP) (Jones Consulting Group Ltd., 2014). Section 3.4 of the County OP (pages 59-75) contains various natural heritage policies, which designate significant natural heritage features for protection, based upon the criteria established in the ERNHSS, as well as promote consideration of the restoration opportunities recommended in the ERNHSS. These County policies are to be reflected in local Municipal Official Plans, including those within the Detroit River watersheds.
Encourage greater public involvement in environmental cleanup activities	Ongoing	Many projects have taken place to enhance the river's natural heritage values through dynamic and collaborative partnerships with federal, provincial, regional, and municipal governments, local organizations, primary, secondary and post-secondary education institutions, and invested individuals.
Coordinate and expand watershed-wide air quality monitoring and remediation programs	Ongoing	The document 'Pathway to Delisting' was created in 2013, and is updated annually to identify the remaining actions necessary to delist the Canadian side of the Detroit River as an Area of Concern.

CONCLUSIONS

To this day, the human heritage and recreational values of the Detroit River remain an important part of the history of our region and, indeed, our country. As a bi-national community, those who live on both sides of the river continue to respect and revere its contributions to our cultural and social fabrics.

The river is situated in the most biologically diverse region in Canada, and keepers of the river continue to protect and restore the plant and animal populations that make the Detroit River their home. A major destination for sport fishing, the Detroit River is recognized around the world for its walleye fishery and bass run. A walk along the river's beautiful promenades will confirm it is important to our community's way of life. Regardless of the hour, people can be witnessed birding, boating, paddling, walking, fishing and appreciating the river's magnificence at all times of day and in every season.



Image 43 - Fishing on the Detroit River.

Described as more a road than a boundary, the Detroit River is a connecting waterway between two countries, and collaboration with American partners has been paramount to the river's continued restoration. Moreover, its role as the busiest international crossing point in North America highlights the Detroit River's role in creating a 'Two-Nation Destination'. Since time immemorial, the river has played a key role in the growth, development and economy of this region. Its rich history and cultural significance as the terminus of the Underground Railroad is just one of many factors that contributed to the Detroit River becoming the only river with both Canadian and American Heritage River designations.

The motto, "The River and the Land Sustain Us" are incorporated into the City of Windsor's corporate Coat of Arms, and confirms the river's critical and valued importance to the well-being of our region.

This report has determined that the values upon which the Detroit River was designated remain intact. Additionally, through efforts of many organizations, agencies and individuals, significant and measurable improvements have been made toward the river's natural heritage values since designation in 2001.

Based on the findings of this report, the Detroit River is most worthy of continued designation as a river of national significance within the Canadian Heritage Rivers System.

APPENDIX I

Table 6 outlines the Stage 2 (2010) and current status of the Detroit River Beneficial Use Impairments (BUI).

Table 6. Status of the Detroit River Beneficial Use Impairments (BUI).

Status of the Detroit River Beneficial Use Impairments (BUI).		
Beneficial Use Impairment	Status in 2010	Status in 2021
Restrictions on fish and wildlife consumption	Impaired for fish	Impaired for fish
Tainting of fish and wildlife flavour	Impaired	Not impaired
Degradation of fish and wildlife populations	Impaired	Impaired
Fish tumors or other deformities	Impaired	Not impaired
Bird or animal deformities or reproductive problems	Impaired	Impaired
Degradation of benthos	Impaired	Not impaired
Restrictions on dredging activities	Impaired	Not Impaired
Eutrophication or undesirable algae	Not impaired	Not impaired
Restrictions on drinking water consumption, or taste and odour problems	Not impaired	Not impaired
Beach closings	Impaired	Not impaired
Degradation of aesthetics	Impaired	Not impaired
Added costs to agriculture or industry	Not impaired	Not impaired
Degradation of phytoplankton and zooplankton populations	Requires further assessment	Not impaired
Loss of fish and wildlife habitat	Impaired	Impaired

APPENDIX II -

Terrestrial habitat restoration efforts within the Detroit River watershed between 2000 and 2020.

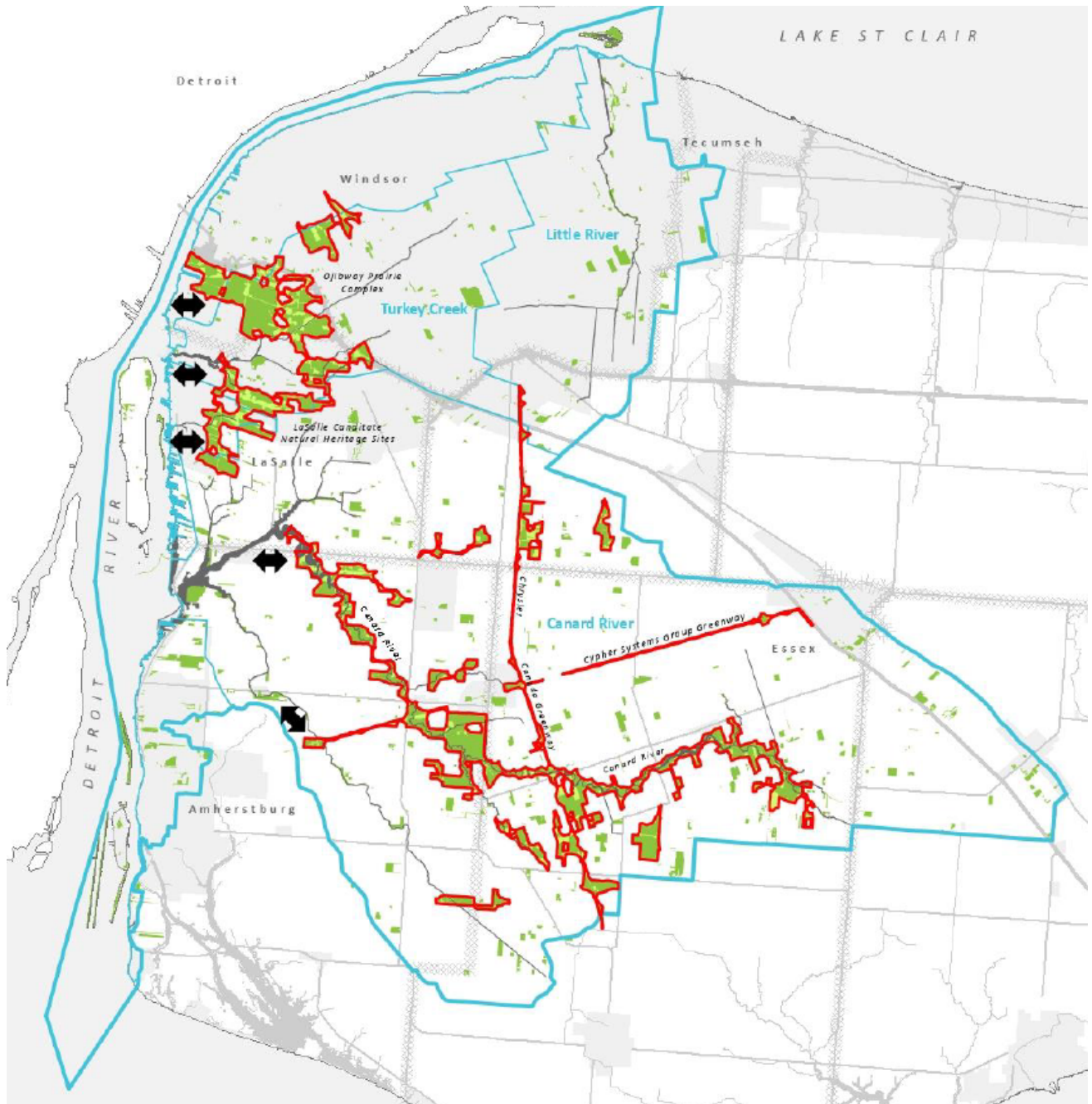


Figure 3 - Terrestrial habitat restoration efforts within the Detroit River watershed between 2000 and 2020.

APPENDIX III

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Acronyms

The following list of acronyms listed alphabetically appear in the report.

AOC	Area of Concern
BNA	Bridging North America
BMP	Best Management Practice
BUI	Beneficial Use Impairment
CEA	Citizen's Environment Alliance
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CHRS	Canadian Heritage River System
CWS	Canadian Wildlife Service
DFO	Fisheries and Oceans Canada
DRC	Detroit River Coalition
DRCC	Detroit River Canadian Cleanup
ECCC	Environment and Climate Change Canada
ECFNC	Essex County Field Naturalists' Club
END	Endangered
ERNHSS	Essex Region Natural Heritage System Strategy
ERCA	Essex Region Conservation Authority
EXTIRP	Extirpated
GLIER	Great Lakes Institute for Environmental Research
GLWQA	Great Lakes Water Quality Agreement
IBA	Important Bird Area
LEBCA	Lake Erie Biodiversity Conservation Strategy
MNDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry
MDOT	Michigan Department of Transportation
MECP	Ministry of Environment Conservation and Parks
MTO	Ontario Ministry of Transportation
NAR	Not at Risk
NFA	Needs Further Assessment
OP	Official Plan
PAC	Public Advisory Council
PAH	Polycyclic Aromatic Hydrocarbons
PBDE	Polybrominated Diphenyl Ethers
PCB	Polychlorinated biphenyl
RAP	Remedial Action Plan
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario
SC	Special Concern
THR	Threatened
TRC	Truth and Reconciliation Commission of Canada
TWEPI	Tourism Windsor Essex Pelee Island
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WDBA	Windsor Detroit Bridge Authority
WPA	Windsor Port Authority

APPENDIX IV

Detroit River and Watersheds: Species at Risk and their Status

The following Table 6 outlines federal and provincial statuses for Species at Risk in the Detroit River and watersheds, taken from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) 2020 annual assessment report and from the Species at Risk list in Ontario (SARO) from the Government of Ontario's Species at Risk (SAR) website in 2021.

Table 7. Detroit River and Watersheds: Species at Risk and their Statuses

Detroit River and Watersheds: Species at Risk and their Statuses			
Common Name/English Name	Scientific Name	COSEWIC Status	SARO Status
Mammal			
Eastern Mole	<i>Scalopus aquaticus</i>	SC	SC
American Badger	<i>Taxidea taxus</i>	END	END
Tri-coloured Bat	<i>Perimyotis subflavus</i>	END	END
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END
Northern Myotis	<i>Myotis septentrionalis</i>	END	END
Birds			
Northern Bobwhite	<i>Colinus virginianus</i>	END	END
Barn Owl	<i>Tyto alba</i>	END	END
Acadian Flycatcher	<i>Empidonax virens</i>	END	END
Piping Plover	<i>Charadrius melodus</i>	END	END
King Rail	<i>Rallus elegans</i>	END	END

Eastern Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END
Cerulean Warbler	<i>Setophaga cerulea</i>	END	SC
Prothonotary Warbler	<i>Protonotaria citrea</i>	END	END
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	SC
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR
Bank Swallow	<i>Riparia riparia</i>	THR	THR
Barn Swallow	<i>Hirundo rustica</i>	THR	THR
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR
Wood Thrush	<i>Hylocichla mustelina</i>	THR	SC
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC
Common Nighthawk	<i>Chordeiles minor</i>	SC	SC
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	SC
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC
Yellow-breasted Chat	<i>Icteria virens</i>	END	END
Bald Eagle	<i>Haliaeetus leucocephalus</i>	NAR	SC
Black Tern	<i>Chlidonias niger</i>	NAR	SC
Herptile			
Spotted Turtle	<i>Clemmys guttata</i>	END	END

Common Five-lined Skink (Carolinian population)	<i>Plestiodon fasciatus</i>	END	END
Eastern Foxsnake (Carolinian population)	<i>Pantherophis gloydi</i>	END	END
Gray Ratsnake (Carolinian population)	<i>Pantherophis spiloides</i>	END	END
Queensnake	<i>Regina septemvittata</i>	END	END
Butler's Gartersnake	<i>Thamnophis butleri</i>	END	END
Blanding's Turtle	<i>Emydoidea blandingii</i>	END	THR
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	SC	SC
Spiny Softshell	<i>Apalone spinifera</i>	END	END
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	THR	THR
Northern Cricket Frog	<i>Acris crepitans</i>	END	EXTIRP
Massasauga	<i>Sistrurus catenatus</i>	THR	THR
Western Chorus Frog	<i>Pseudacris triseriata</i>	THR	NAR
Lake Erie Watersnake	<i>Nerodia sipedon insularum</i>	END	SC
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	SC	NFA
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC
Milksnake	<i>Lampropeltis triangulum</i>	SC	NAR
Eastern Ribbonsnake	<i>Thamnophis saurita</i>	SC	SC
Fish			

Northern Madtom	<i>Nosturus stigmosus</i>	END	END
Silver Chub (Great Lakes – Upper St. Lawrence populations)	<i>Macrhybopsis storeriana</i>	END	THR
Blackstrike Topminnow	<i>Fundulus notatus</i>	SC	SC
Eastern Sand Darter	<i>Ammocrypta pellucida</i>	THR	END
Redside Dace	<i>Clinostomus elongatus</i>	END	END
Black Redhorse	<i>Moxostoma duquesnei</i>	THR	THR
Spotted Gar	<i>Lepisosteus oculatus</i>	END	END
River Redhorse	<i>Moxostoma carinatum</i>	SC	SC
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>	SC	SC
Warmouth	<i>Lepomis gulosus</i>	END	END
Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)	<i>Acipenser fulvescens</i>	THR	END
Lake Whitefish	<i>Coregonus clupeaformis</i>	THR	NAR
Channel Darter	<i>Percina copelandi</i>	SC	SC
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	SC	SC
Grass Pickerel	<i>Esox americanus vermiculatus</i>	SC	SC
Northern Sunfish	<i>Lepomis peltastes</i>	SC	SC
Pugnose Minnow	<i>Opsopoeodus emiliae</i>	THR	THR
Pugnose Shiner	<i>Notropis anogenus</i>	THR	THR
Spotted Sucker	<i>Minytrema melanops</i>	SC	SC

Mussel/Mollusk			
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	END	END
Snuffbox	<i>Epioblasma triquetra</i>	END	END
Hickorynut	<i>Obovaria olivaria</i>	END	END
Round Hickorynut	<i>Obovaria subrotunda</i>	END	END
Kidneyshell	<i>Ptychobranthus fasciolaris</i>	END	END
Lilliput	<i>Toxolasma cylindrellus</i>	END	THR
Salamander mussel	<i>Simpsonaias ambigua</i>	END	END
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	SC	THR
Eastern Pondmussel	<i>Ligumia nasuta</i>	SC	SC
Round Pigtoe	<i>Pleurobema sintoxia</i>	END	END
Rayed Bean	<i>Villosa fabalis</i>	END	END
Plant			
False Hop Sedge	<i>Carex lupuliformis</i>	END	END
White Prairie Gentian	<i>Gentiana alba</i>	END	END
Slender Bush-clover	<i>Lespedeza virginica</i>	END	END
Small-flowered Lipocarpa	<i>Lipocarpa micrantha</i>	END	THR
Heart-leaved Plantain	<i>Plantago cordata</i>	END	END
Eastern Prairie Fringed-orchid	<i>Platanthera leucophaea</i>	END	END
Pink Milkwort	<i>Polygala incarnata</i>	END	END
Drooping Trillium	<i>Trillium flexipes</i>	END	END

Skinner's Agalinis	<i>Agalinis skinneriana</i>	END	END
Scarlet Ammannia	<i>Ammannia coccinea</i>	END	END
Colicroot	<i>Aletris farinosa</i>	END	END
Wild Hyacinth	<i>Camassia scilloides</i>	THR	THR
Goldenseal	<i>Hydrastis canadensis</i>	SC	THR
Dense Blazing Star	<i>Liatris spicata</i>	THR	THR
Purple Twayblade	<i>Liparis liliifolia</i>	THR	THR
Willowleaf Aster	<i>Symphyotrichum praealtum</i>	THR	SC
Dwarf Lake Iris	<i>Iris lacustris</i>	SC	SC
Swamp Rose-mallow	<i>Hibiscus moscheutos</i>	SC	SC
Climbing Prairie Rose	<i>Rosa setigera</i>	SC	SC
Riddell's Goldenrod	<i>Solidago riddellii</i>	SC	SC
Pygmy Pocket Moss	<i>Fissidens exilis</i>	SC	SC
Green Dragon	<i>Arisaema dracontium</i>	SC	SC
Tree			
American Chestnut	<i>Castanea dentata</i>	END	END
Blue Ash	<i>Fraxinus quadrangulata</i>	THR	THR
Butternut	<i>Juglans cinerea</i>	END	END
Eastern Flowering Dogwood	<i>Cornus florida</i>	END	END
Cucumber Tree	<i>Magnolia acuminata</i>	END	END
Red Mulberry	<i>Morus rubra</i>	END	END

Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	THR	THR
Common Hoptree	<i>Ptelea trifoliata</i>	SC	SC
Shumard Oak	<i>Quercus shumardii</i>	SC	SC
TOTAL		COSEWIC	SARO
Endangered		54	48
Threatened		23	21
Special Concern		30	34
No Longer at Risk		2	3
Additional Species at Risk since 2001 to 2011 10 Year Monitoring Report		42	38
TOTAL ENDANGERED/THREATENED/ SPECIES OF CONCERN		107	103

THR = Threatened

END = Endangered

SC=Special Concern

EXTIRP = Extirpated

NAR = Not at Risk

NFA = Needs Further Assessment